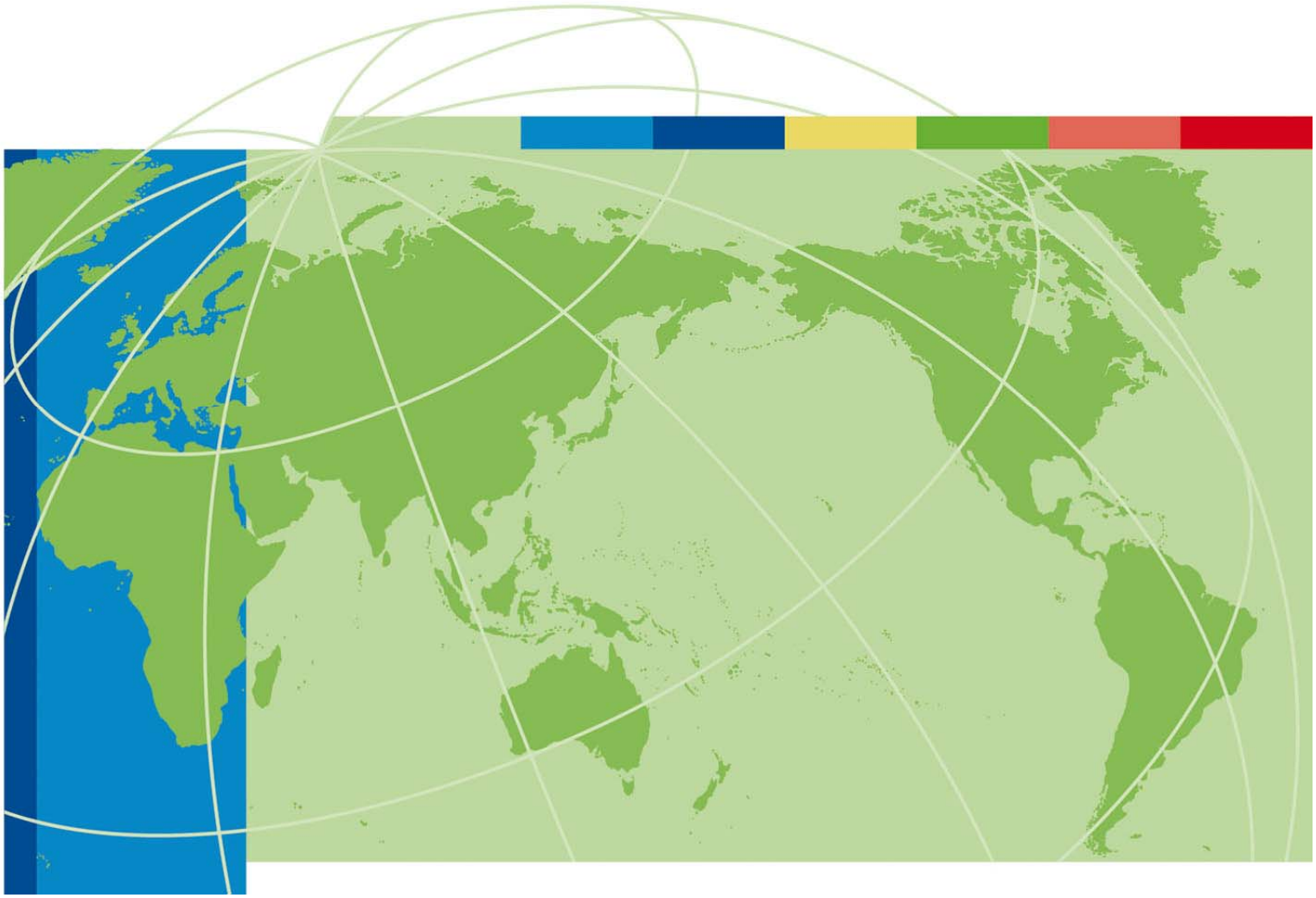
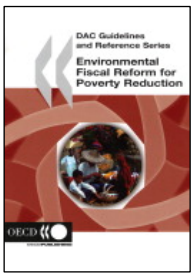


Environmental Fiscal Reform

A Practice-Orientated Training for Policy Makers,

Administration Officials, Consultants and NGO Representatives

TRAINING MANUAL FOR PARTICIPANTS



This Training is based on the OECD Development Assistance Committee (DAC) Guidelines: Environmental Fiscal Reform for Poverty Reduction, Paris 2005. Download: http://www.oecd.org/

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Content of the Manual

Conceptual Background and Objectives of the Training

Background to Environmental Fiscal Reform

Fighting poverty whilst safeguarding our environment is a major challenge. In order to achieve success, the choice of instrument is crucial. Market-based instruments (MBIs) have been increasingly applied in the last two decades, as they have proven to lead to efficient environmental protection, to trigger innovation, and possibly create revenues which could be – at least partially – used for poverty reduction.

Of all available MBIs, “Environmental Fiscal Reform” (EFR) has shown to be one of the most promising instruments. EFR refers to a range of taxation and pricing measures which can raise fiscal revenues while promoting environmental goals. EFR includes e.g. taxes on natural resource use, pollution charges, fees charged for environmentally damaging practices, and reducing and/or restructuring environmentally harmful subsidies.

The implementation of EFR can have **four major benefits**:

- **Environmental**
  EFR can directly address environmental problems that threaten the livelihoods and health of the poor, can improve the resource efficiency of all stakeholder activities, including leading to sustainable use of natural resources in the long run.
- **Economic**
  EFR can reduce the abatement cost of negative environmental impacts and also free up economic resources or generate revenues that can help to finance efficient and cost-effective (environmental) services.
- **Social**
  EFR can help reduce negative environmental impacts, especially on poor and other vulnerable groups, and finance access of the poor to water, sanitation and electricity.
  In European countries revenues from EFR are also used to reduce ancillary wage costs, thus reducing overall labour costs and boosting employment.
- **Structural**
  EFR can be designed in such a way that it contributes to good governance. If EFR instruments are designed to be applied cost-efficiently, involve relevant stakeholders during the design process, and are effectively enforced, this can result in enhanced transparency and accountability.

EFR can make a major contribution to the implementation of the decisions of the United Nations Conference on Environment and Development in Rio de Janeiro 1992 regarding environment and development, particularly with respect to chapters 8 (integrating environment and development in decision making) and 37 (national mechanisms and international cooperation for capacity building in development countries) as well as with respect to various sectoral chapters of Agenda 21. EFR

is also an important concept for putting in practice the decisions of the World Summit for Sustainable Development 2002 in Johannesburg, as well as of the subsequent Marrakech process on Sustainable Consumption and Production.

Moreover, the international community has committed itself to the Millennium Development Goals (MDGs), including the overarching target of halving extreme poverty by the year 2015. To help achieve the MDGs, developing country governments need to mobilise revenues to invest in schools, health care, infrastructure and the environment. EFR can play an important role in pursuing the MDGs of “halving absolute poverty” and of “reversing the loss of environmental resources by the year 2015”. Indeed, the United Nations Summit on Financing for Development and on Sustainable Development in 2002 recognised the potential contribution of EFR-related approaches. The latter stressed that poverty reduction and improved environmental management go hand-in-hand and confirmed the importance of market-based instruments in its official report. EFR instruments should be thought of components of fiscal and environmental policy package mixes, not as “stand alone” policy instruments.

In 2005, the Organisation for Economic Co-operation and Development/Development Assistance Committee (OECD/DAC) through its Network on Development Co-operation and Environment (ENVIRONET) published the DAC Guidelines and Reference Series “Environmental Fiscal Reform for Poverty Reduction”. This document is one important reference work which can be used to assess progress and impacts in designing and implementing EFR in developing, emerging and transition economies.

Participants of the 8th Global Conference on Environmental Taxation (GCET), 18-20 October, within the framework of which the BMZ/GTZ hosted a Special Workshop on “Environmental Fiscal Reform in Developing, Emerging and Transition Economies”, not only stressed the need for financial long term support, but also the need for Capacity Development in the context of Environmental Fiscal Reform. Among the participants of the conference were policy-makers working in the fields of both public finance and environment in developing, emerging and transition economies, as well as academics, persons working at community level (in politics and the administration), or for environmental and other non-governmental organisations and development and implementing agencies.

OECD/DAC has also highlighted the importance of Capacity Development and recognised that capacity development is a fundamental component of development cooperation and aid effectiveness and a key element in achieving the Millennium Development Goals (MDGs) through its Guidelines ”The challenge of capacity development” published in 2006.

One outstanding component of capacity development is training. For this and all the other reasons enumerated above, this training programme on Environmental Fiscal Reform in developing, emerging and transition economies has been developed by GTZ and GBG. It seeks to foster discussions on EFR elements in partner countries and to serve as “kick-off” for mid- to long-term EFR related processes and concrete EFR application.

Objectives of the Environmental Fiscal Reform Training

This EFR training was designed for the **target groups** policy makers, administration officials, consultants, NGO representatives and other stakeholders of developing, emerging and transition economies, as well as representatives of donor agencies or academics interested in promoting or applying EFR, although it might also prove useful for the same target groups in industrialised countries. The training will address the following questions:

1. What is EFR? Where does it start and where does it finish? Which are the main elements of EFR (taxes, fees and subsidies), how does each of these instruments work and how could they work together in a coherent way to achieve tangible environmental impacts? What should be taken into consideration to arrive at economic, social and organisational impacts as well?

2. When is EFR needed and when should it be promoted? Which conditions should be engendered to enhance the EFR process? What issues should be considered in such processes?

3. How can we start to promote an EFR process? How can we identify windows of opportunity to initiate a process of EFR? Where are the needs of the country and how can we link them to EFR?

4. What are the principal aspects that make EFR work? What are the main challenges? How can they be tackled?

5. How can EFR contribute to a process of financial sustainability and effectiveness of environmental policy?

6. Linking EFR to other tools: e.g. which dynamics of existing financing instruments could be used for the implementation of EFR instruments? How do EFR instruments relate to other financing instruments and mechanisms? How does EFR link in practice to national planning (and, where relevant, to new development assistance / aid modalities)?

After discussing these questions throughout the training with the help of presentations, plenary discussions, interactive case study exercises in small teams, and individual reflection on conclusions for one's own country, as well as elaboration of a personal EFR-Action Plan, participants of the 3-day training on EFR will have achieved the following **objectives:**

- Participants have understood the definitions, concepts, and instruments of EFR
- Participants are able to apply this know-how to their own country / institution
- Participants are able to start implementing this know-how within their own sphere of influence after the training with the help of the personal Action Plan.

The achievement of these objectives can be measured by the following **success indicators**:

- Participants evaluate the EFR training positively (see evaluation sheet)
- Working documents (flipcharts, cards, etc.) show that participants have participated actively and have understood the messages of the training (see photo-documentation and documentation formats)
- Participants have elaborated during the training an Action Plan that indicates clear further steps to be taken subsequent to the training (see Action Plans)
- 50 % of the participants apply their Action Plan / have started the application of their Action Plan 2 months after the training (see either written enquiry or network follow-up meeting)

Overview: Financing Instruments and Mechanisms for the Environment

The diagram below provides an overview of the broad spectrum of financing instruments and mechanisms in the environmental field. GTZ's focus within the Environmental Finance concept is on financing approaches that pursue both functions - incentive and financing - and are therefore directly linked to resource use. Priority is given to the mobilisation of domestic revenues, both local and national, through market-based instruments (illustrated in the upper section). These instruments can be applied together with financing mechanisms in order to allocate and administrate funds efficiently (blue circle). It is these instruments that are the focus of this training package.

Appropriate framework conditions must be in place to tap the full potential of environmental financing instruments. Certain financing instruments may not be implemented efficiently or implementation may even fail altogether if policy, institutional or market failures prevail. Therefore, changes in the governance structure can not only foster sustainable resource use but also help to generate funds for conservation in a more effective and efficient manner, while using adequate financing instruments. In this context, Environmental Fiscal Reform in particular can function as a driver of other necessary reforms of the environmental governance structure.

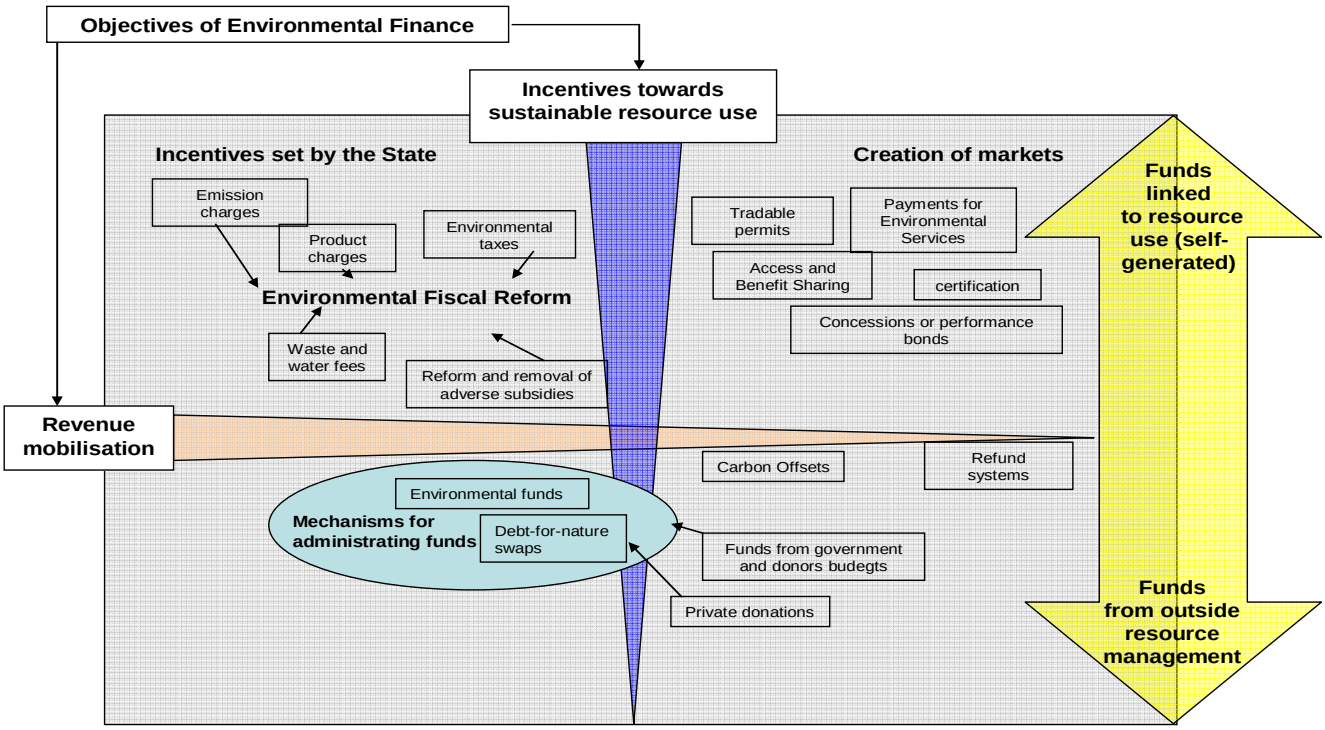

Diagram based on Emerton, L. et al. (2006) Sustainable Financing of Protected Areas, IUCN and Fischer, A. / Petersen, L. / Hubbert, W. (2004): Natural Resources and Governance: Incentives for Sustainable Resource Use, GTZ).

Module 0: Opening and Learning Agreement

Objectives

Participants know

- participants, trainers and organisers (who is there?)
- objectives of EFR training (why?)
- programme (how?) and
- working methods and rules (how?)

Trainers

- know expectations of participants and whether they are compatible with offer (objectives and programme)
- have presented and discussed working methods.

Duration: *60 min*

Structure

Sociometric exercise, presentations, question & answer sessions

Module 1: Definitions and Concepts of EFR

Session 1-1: Environmental Issues and EFR in your Country

Learning objectives

a) Related to Content

Participants have reflected upon and communicated the actual situation in their respective countries with respect to EFR

Duration: 60 (– 90) minutes

Structure

Individual / group exercise and plenary session

Instructions:

Please reflect on the following questions:

1. What are the major environmental problems and challenges **your country** (your institution) is facing?
2. Which major stakeholders are affected by these environmental problems and in which way?
3. What are your ideas about the causes of these problems and their effects
4. Have any EFR measures been implemented in your country?

- If yes, which instruments have been used?
- Have they been successful? Why? Do you know of any shortcomings? (step 5 – implementation of measures and to some degree step 6 – integration into institutional structure)
- If EFR instruments have not been implemented, do you know why not?

Please visualise your reflections directly on the flipchart / cards

Plenary session: There will be a plenary presentation / discussion of results

Session 1-2: Introduction to EFR: definitions, concepts and instruments

Objectives

The participants have a sound knowledge of EFR instruments, e.g.

- their applicability to environmental problems, their advantages and disadvantages, and ways of combining different instruments and the effects
- the 5 stages of the EFR policy cycle (theoretical approach)

Duration 60 min

Structure – Plenary session

- Presentation ppt: Introduction to EFR and EFR Instruments *(30 min)*
- Question and Answer Session *(30 min)*

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Module 2: Introduction to the EFR Policy Cycle

Session 2-1: Application of Environmental Issues and the EFR Policy Cycle to the Case of Industrial Pollution in Gothland-1

Exercise: Agenda setting and policy development

Objectives:

Participants are able to practically apply in a systematic way the information on environmental problems, EFR cycle and instruments to a near reality case.

Duration: (90-)*120 min*

Structure

Case Study exercise: group work and plenary session

Training Aids:

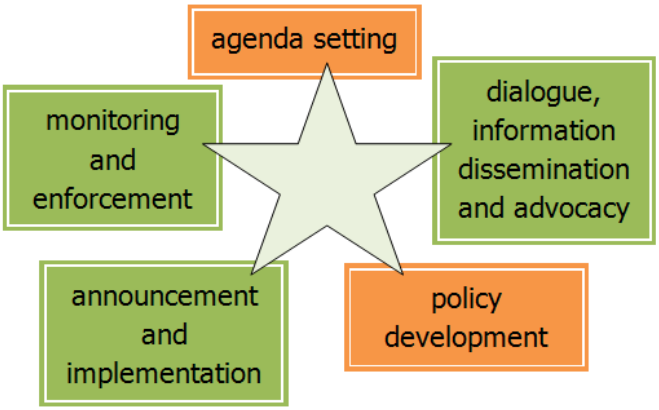
Sheet 1: Exercise: Agenda Setting and Policy Development

Sheet 2: Case Work Industrial Pollution in Gothland

Sheet 3a + 3b: Agenda Setting and Policy Development - Questions

Sheet 1 - Exercise: Agenda Setting and Policy Development

Task



You are working for the research and advisory institution "Green Gothland" which has been **commissioned** to carry out an analysis of the problem of industrial pollution and to evaluate possible means of reducing it in the country of Gothland.

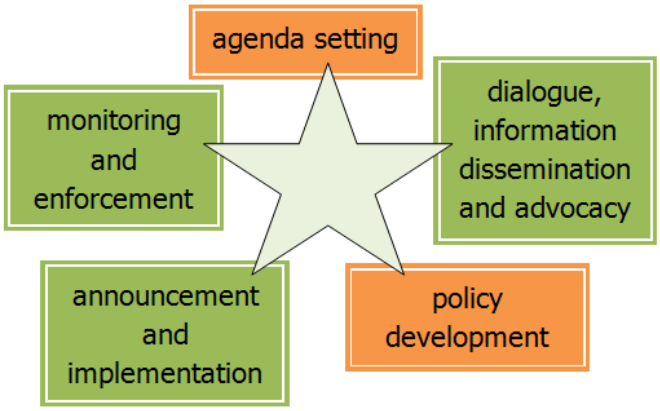
Researchers/advisors at the institution have decided to hold a meeting to discuss possible methods of combating industrial pollution in the country, and to evaluate and discuss the advantages and disadvantages of each proposal and to agree on a final proposal of measures you will present to your client.

Instructions

- Read the background information on industrial pollution in Gothland carefully
- Establish a research team of 4 – 6 persons (from different countries/institutions)
- Discuss the information received with your team for answering the questions and completing Sheet 3 – Table 3a and 3b: Agenda Setting with your working group
- Discuss all questions / boxes and relevant information, especially table 3a, i.e. what instruments / combination of instruments could achieve the selected main objective
- Visualise your results on a flipchart, at least for those questions / boxes attributed to your team by the trainer, so that those results can be presented in plenary (and so that teams complement each other)
- Presentation and discussion of results will be done in a plenary session after group work: you should select a co-ordinator in your team and one person for presentation in plenary
- Use the assigned boards and flipchart, paper and pens

Sheet 2 - Case Work Industrial Pollution in Gothland

Background information: Gothland



Gothland is a (fictional) developing country undergoing a period of rapid growth and industrialisation.

Gothland is a low-income country and a parliamentary democracy with universal suffrage. It has a population of approximately 14 million, and a total area of 41,000 km^2. Gothland's urban areas have very high population densities. The urban poor tend to live in informal settlements towards the edge of the country's three largest cities, all with populations over or approaching 1 million. Many do not have access to electricity supplies. Over the past few years, economic growth has been accompanied by the development of an urban middle class, who enjoy relatively cheap electricity supplies to their homes. Electricity is currently not subject to taxation.

Gothland has large coal reserves, as well as tin and copper ore. Almost 90% of Gothland's electricity is generated using coal. Gothland is a net exporter of electricity.

Economic growth in Gothland began to increase rapidly in 2003, reaching 7% per annum by 2007. This growth was based on growth in the paper processing, chemicals and manufacturing sectors. A growing middle class has stimulated considerable growth in the service industry. This economic boom has had a significant impact on environmental quality.

The single most important environmental problem in Gothland is air pollution from the 10 private-sector owned coal-fired power stations for electricity generation. Electricity generation was privatised in the early 1980s, but poor regulation, inadequate management practices and insufficient investment to "clean up" these power stations has posed a major problem within the sector ever since. One reason for the lack of investment within the sector is a reluctance to increase electricity prices – a reluctance supported by successive governments – which has meant that power generation companies do not have sufficient funds to invest e.g. in reducing emissions.

Thus, electricity generation from coal in Gothland relies on old, dirty and relatively inefficient technology. Although the Clean Air Act of 1997 introduced a regulatory framework for the monitoring of emissions from coal-fired power stations and set an upper limit on SO_2 emissions per kilowatt (kW) of electricity generated, this has been poorly enforced. Monitoring equipment is in many cases faulty, the enforcement agency – the National Agency for Health and Environment (NAHE) – is severely underfunded, and their agents are poorly paid and badly trained. In addition, NAHE staff are often bribed to record SO_2 emissions incorrectly, or not to record them at all. So far, government has not developed an effective response to this problem.

Major pollutants emitted include sulphur dioxide (SO_2), nitrogen oxides (NO_X), particulate matter, hydrocarbons and carbon dioxides (CO_2). Emissions have increased since Gothland's economic

boom, because new paper and chemicals factories and increased manufacturing of textiles, beverages and low-tech consumer goods have increased electricity demand by more than 30% over the past 10 years.

Studies have revealed that coal-fired power plants in Gothland are responsible for over 50% of all SO_2 emissions. Fossil fuels used in industrial processes make up approximately 15% of the remainder, and mobile sources (vehicle emissions) and households (burning fossil fuels) each account for 15%.

Expectations among the general population that the government must take action to tackle the problem are on the increase. Air quality in residential areas located close to coal-powered electricity generation plants – largely inhabited by the urban poor – has been deteriorating. Human health is seriously affected, most significantly in the form of increased respiratory disease (asthma, infections, bronchitis). The incidence of respiratory disease has increased by as much as 25% in some urban areas in the last ten years.

In addition, air pollution has also caused acidification of lakes and soils and appears to be impacting on crop productivity and forest growth. Research indicates that ozone and SO_2 emissions are reducing crop yields, indeed a recent study revealed that the recent 30% reduction in rice yields appears to be related to the presence of pollutants in the air.

Ways of dealing with the environmental problem of sulphur dioxide pollution

- Reducing sulphur content of coal before combustion e.g. by introducing fluidised bed combustion.
  = Reduces SO_2 emissions by 95% (and NO_X emissions as well).
  = Costs USD 500 to 1,000 / ton sulphur.
- Installing flue gas desulphurisation technologies – in effect, ‘cleaning’ gases emitted during burning (also referred to as wet or dry scrubbing).
  = Reduces SO_2 emissions by 80%.
  = Costs USD 150 to 500 / ton sulphur.
- Increasing efficiency of existing coal-powered power plants, e.g. by using new technologies, to reduce SO_2 emissions per Kilowatt hour (kWh) electricity generated
  = Maximum SO_2 emissions reductions 40%.
  = Costs USD 500 to 1,000 / ton sulphur.
  Shifting to fuel sources with lower sulphur content, either to natural gas or renewable energies, or a combination of both.
  = SO_2 emissions reductions vary according to degree of shift
  = Costs range between USD100 to 1,000 / ton sulphur.

Implementation and monitoring

All options are relatively easy to monitor by measuring the quantity and quality of coal inputs into power generation plant and comparing this with easily available data on the sulphur reduction rates of the technologies described.

Possible measures

Measure	Advantages	Disadvantages
Tax on SO_2 emissions	Taxes pollutant directly Paid by small pool of emitters – easy to administer Raises revenues – which can also cover costs of policy (monitoring, enforcement) Price signals also felt by end users	Easier to set tax levels accurately to incentivise SO_2 emissions reduction Competitiveness impacts (electricity exports, higher costs for chemicals & paper industries) Resistance from power industry
Charge on SO_2 emissions	Similar advantages as a tax, but in addition, revenue will be used to reduce the impact of SO_2 emissions, so rates need not be as high, but can be equally effective in reducing emissions	Similar advantages as a tax, though tendency less strong As rates are not so high, less substantial revenues can be expected Revenues cannot be used for poverty reduction programmes
Tax on electricity	Price signals to increase efficiency of electricity use which generally favours cleaner fuels Raise revenues	Impact not specifically on SO_2 emissions and thus hard to predict. Impact on energy-intensive industry May reduce resistance from stakeholders in electricity generation as tax has broader base than SO_2 tax
Subsidise emission-reducing technology	Industry would support measure Emissions would be reduced Rapid environmental improvement likely once technology introduced	Costly policy – how will subsidies be funded? Risk of subsidy dependence Subsidies do not create dynamic incentive for change but tend to perpetuate the status quo (if a specific technology is financed and not the achievement of a certain threshold by any technology)
Set minimum SO_2 emissions standards	Would ensure minimum standards are achieved (if enforced – which is though a very important condition and requires strong political will and a good administration)	Will not create dynamic incentive for change Costs of monitoring and enforcement must be covered (source?)

Sheet 3a - Table: Agenda Setting

Questions	**Answers / Proposals**
1) What is the main environmental problem of Gothland?	
2) How would you describe its actual impact(s)? (environmental, social, economic, organisational)	
3) What are the major causes and what stakeholders are involved?	
4) What should the primary objective of an EFR policy?	

***Sheet 3b* - Table: Agenda**

For questions 5-8 please fill in the following table can.
5) What instruments / combination of instruments could achieve this aim?
6) Who would have to implement the policy?
7) What would be the expected effects and on which stakeholders?
8) What other changes might occur as a result of the different policy?

Sheet 3b - Table Agenda Setting / Policy Development

Legend: **(+)** = positive effects **(O)** = neutral effects **(-)** = negative effects **(*/*)** = no effects (?) do not know

Country	Institution	1 - Measure	2a- Environmental effects	2b- Economic effects (cost effectiveness)	2c- Social effects	2d- Organisational effects	3- Capacity to implement
Goth-land		**1-**					
		2-					

Session 2-2: Conceptual presentation: EFR Policy Cycle

Objectives

Participants understand the content of the different stages of the EFR Policy Cycle

Duration *(60 min)*

Structure – Plenary session

- 1- Presentation 1.1. part 2: Introduction to EFR-Policy Cycle *(20-30 min)*
- 2- Question and Answer Session *(20 - 30 min)*

Session 2-3: Application of Environmental Issues and EFR Policy Cycle to Case Industrial Pollution in Gothland-2

Exercise: Dialogue, Implementation and Enforcement

Objectives

Participants are able to

- practically apply the information on environmental problems and instruments in a systematic way to the EFR policy cycle in a near reality case
- deal with certain trade-offs and compromise on compensatory measures
- think about measures which increase capacity to implement.

Duration 90-120 min

Structure

Case study exercise: group work and plenary session

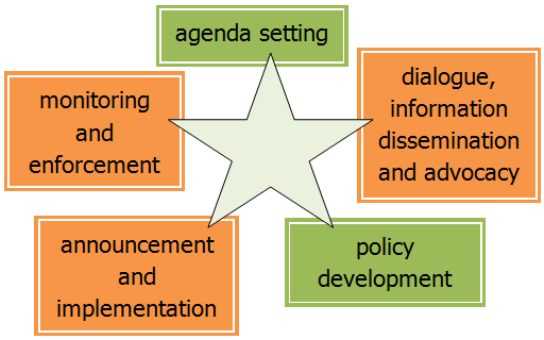
Training Aids

Sheet 4: Exercise Gothland – 2: Dialogue Implementation and Enforcement
Sheet 5: Exercise Gothland – 2: Analysis of Field of Energies of Stakeholders

Sheet 4 - Exercise Gothland - 2: Dialogue, Implementation and Enforcement

Task

"Your research / advisory team of "Green Gothland" was successful in convincing relevant political bodies to accept in principle your analysis and policy proposal (the one the majority of your team agreed upon / one form of the group results entrusted to you by your trainers). In order to refine the proposal and before announcing it, the government asked you to prepare an in-depth analysis of the concerns of possibly affected stakeholders and to develop adequate (additional) considerations for the possible implementation and enforcement of your policy.



Instructions

To refine your policy proposal please

- analyse, for each of the stakeholders below, their main interests and concerns, and the possible effects of the envisaged EFR measures on them.
- discuss possible common interests among different stakeholders and develop compensatory / motivating measures for generating support for the application of the envisaged EFR policy
- please use the format used in sheet 5 for visualisation of your results on the FC/Board

1) Stakeholder interests *(see Sheet 5)*

For each of the stakeholders below, work together with the team from exercise 1 and list and analyse their main interests and concerns, and the possible effect of EFR measures on them.

- The (urban and rural) poor
- The growing middle class in Gothland
- Government ministries (Finance, Environment, other?)
- Enforcement agencies
- Power generators
- Energy-intensive manufacturing
- Service industries

2) Policy proposal

- Taking this information into account draw up a policy proposal that includes parallel compensatory measures to deal with the stakeholder's legitimate concerns.
- Think about finding common interests among different stakeholders and developing strategies to exploit these similarities.

At the end of the session, you will present your results and discuss them with the other participants.

Sheet 5 – Exercise Gothland – 2: Analysis of field of energies of stakeholders

Favourable impact (favourable arguments, acts and behaviour)		Stakeholders / actors affected by / influencing the EFR policy	Possible measures for reducing/neutralising negative effects and possible resistance, using or increasing support (type of contacts, communication, co-operation)	Neutral / no impact (arguments, acts and behaviour)	Unfavourable impact (arguments, acts and behaviour)	
+ +	+	**Name**	**Description**	**o**	-	- -
Less health problems due to SO_2		urban poor			rising electricity prices	
		rural poor				
	Less health problems due to SO_2	growing middle class				rising electricity prices
		power generators				
		energy-intensive manufacturing				
		government ministries – Finance				
		government ministries – Environment				
		government ministries - Trade / Health / other?				
		National Agency for Health and Environment (NAHE)				
		service industry				

Session 2-4: Identifying and avoiding possible obstacles to the implementation of EFR

Objectives

Participants are able to

- know typical obstacles to the implementation of EFR policy and country examples
- identify possible obstacles to the implementation of EFR in their own country at all stages of the EFR policy process
- apply the lessons learned on the EFR cycle and stakeholders to their own country.

Overall Duration 60 – 75 min

Structure

Plenary sessions and individual / group work

Training Aids

Sheet 6: Identifying and Avoiding Obstacles

Task

During this session, you will work together in 5 small groups, one group for each stage of the EFR policy cycle. Make sure that you work in different groups than in previous sessions.

During the session, you are required to find ways around obstacles to EFR at various stages of the EFR policy cycle. At the end of the session, lessons learned for your own country will be discussed.

Instructions

During this exercise, you will

- look at some typical obstacles to EFR implementation by discussing ways of finding solutions to some typical problems described in given examples for one step of the EFR Policy Cycle
- visualise your findings on the FC
- briefly present your main findings (5 min) in the plenary and answer questions from your colleagues

Sheet 6 – Identifying and Avoiding Obstacles

Instructions

- Below you are given examples of typical problems during the implementation of EFR.
- Please discuss, as a group, ways of dealing with these problems. Each group discusses the problems of ONE of the stages of the policy cycle.
- Please visualise your findings on the FC / board.

Examples of obstacles

1) Agenda setting

- **Country A** lacks the capacity to conduct in-depth research to identify und analyse potential fields of action.
- In **country B**, the Ministry of Finance and Ministry of Environment are unused to working together on the development of legislation. Meetings have failed to find common ground for policy development, and agenda setting has stalled.
- In **country C**, the government has commissioned a study to investigate the potential of implementing energy tax on transport fuels, coal, gas, and electricity. A powerful lobby group representing energy-intensive industry and power generation is strongly opposed to such measures and has come to dominate discussion of the policy in the media.

2) Policy development

- In **country D**, tax rates on the extraction of lumber have been set so low that the costs associated with collecting the tax are greater than the revenues from the tax itself. Collection rates are low and enforcement poor, and forestry practices remain unsustainable.
- In **country E**, policy development has stopped. When elected, the government declared its intention to implement a pollution charge on the discharge of waste water into the country's largest river. However, frustration with the complexity of legislation and a lack of communication between ministries has stopped the policy process.
- In **country F**, the media is lobbying against the introduction of purchasable fishing licences linked to a quota system on Lake Emily (revenues will fund the scheme and sustainable fishery management practices on the lake), claiming that proposals will impact negatively on poor and vulnerable fisherman.

3) Dialogue, information dissemination and advocacy

- In **country G**, proposals to subsidise provision of water supply to informal settlements on the edge of the country's second city have been met with disinterest on the part of water companies. Meetings organised by the Environment Ministry have been poorly attended.

In spite of the subsidies, private water companies prefer to invest in wealthier neighbourhoods due to what they perceived as greater certainty of income.

- In **country H**, attempts on the part of the government to enlist the support of environmental NGOs for the introduction of a tax on logging have been unsuccessful. They argue that regulation is a more appropriate response.
- In **country J**, both the middle classes and the urban poor are lobbying vigorously against the introduction of a tax on electricity. Although the vast majority of the poor do not have access to electricity supply, they are concerned that they will not be able to afford to be connected in the future.

4) Announcement and implementation

- In **country K**, fuel price rises in the past have lead to widespread rioting and even on one occasion to the overthrow of the government. The government is currently preparing to reduce fuel subsidies and thus increase fuel prices – it cannot afford spending on subsidies and must reform its policy.
- In **country L**, the announcement of a plastic bag levy has led to a strong negative reaction on the part of shopkeepers and market sellers. They are threatening to refuse to pay the charge and have criticised it widely in the media for being too bureaucratic and damaging to small enterprises.
- In **country M**, the fiscal system has been reformed and water supplies must now be metered, unless water is being used for commercial purposes. However, private users are currently exploiting a loophole in this legislation and claiming that they run a small-scale enterprise from their private dwelling. This is proving very hard to verify.

5) Monitoring and enforcement

- In **country N**, EFR legislation has been in place for some time. However, enforcement and compliance are relatively low due to social considerations – enforcement agency staff are concerned about the social impact these policies will have on the ground – and because the environment is not seen as a political priority by the government.
- **In country P**, stakeholders in the timber industry are refusing to cooperate with agencies responsible for the enforcement of a new timber extraction levy. What is more, fines for evasion of the levy are very low.
- In **country Q**, the Ministry of the Environment is finding it hard to assess whether revenues from the two-year old SO_2 emissions levy have reached a level that reflects SO_2 emissions in the country. Monitoring requires measuring emissions, which can be quite expensive and susceptible to fraud and manipulation.

Module 3: Analysis of the economy and existing EFR instruments

Session 3-1: Analysing the political economy of EFR in your country

Objectives

Participants are able to analyse the political economy of EFR in their own country

1. macro-economic issues
2. Legislation relevant to environment
3. operation of the fiscal system
4. implementation issues

Duration (60-90 min)

Structure

Presentation plus application in group work and debriefing in plenary

Instructions

You are responsible for preparing sound foundations for introduction of EFR in your country.

Please analyse your country using your results from session 1-1 (including any additions made to your visualisation during later sessions) and the questions below. Visualise your results on a FC.

Use the following questions as a guide *(30-40 min)*:

- Which factors related to the context of the major environmental challenges in your country are relevant to understand the implementing environment of EFR in your country?

  Think about:
  - existing fiscal measures and legislation (recent reforms, taxes, fees, exemptions, subsidies & perverse incentives, existing EFR measures – are they enforced?)
  - the legal basis for EFR legislation (Has EFR already been implemented? Is a robust legal framework already in place?)
  - the capacity of Ministries, bureaucracy and enforcement agencies
  - the economic context (Structure? Important industries? Sources of wealth? Dependence on sources of energy? Patterns of (land) ownership?)
  - the political context (Who is in power? How do decision-making processes work?)
  - the social context (Vulnerable groups? Potential sources of support for policy? Literacy?)

- What enabling conditions are required for the implementation of EFR in your country?

  How could you go about creating these conditions?

Each group should present their main findings to the other groups as briefly as possible (2-3 min). Then compare and contrast your results.

Session 3-2: EFR and the Transport Sector in Murundi

Objectives

Participants are able

- to analyse the political economy of EFR in the transport sector (exercise 1)
- to develop a policy reform proposal (exercise 2)

Exercise 1: Analysis of Economic Instruments in the Murundi Transport Sector

Duration (*60-90 min)*

Structure

Case Study exercise: group work and plenary session

Training aids

Sheet 7: Background information Murundi
Sheet 8: Fuel prices and tax rates in Murundi in the transport sector
Sheet 9: Aspects for analysis of political economy in own country

Task

You are teams of advisors to different Ministries in Murundi (Finance, Environment, Transport) and have been asked by your ministries to analyse the economics of the transport sector for possible policy revision.

Instructions

Please discuss in your team on the basis of the background information *(Sheet 7)* and the table below *(Sheet 8)*, all the following questions and visualise results on FC:

1. What impact has the increasing petrol price had on petrol sales?
2. Do petrol, diesel and kerosene prices reflect the market price? How can you tell?
3. What does this tell you about eventual effectiveness of introducing EFR measures which will affect petrol prices?
4. Murundi has average inflation rates of 10%. What does this tell you about the development of fuel prices between 2000 and 2007?
5. How does this inflation rate of 10% impact upon the incentive effect of a tax of e.g. 1 cent per physical unit such as litre or kWh?
6. What trends can be identified in the cost of public transport? Can you identify the cause of these changes?

Sheet 7 - Case Work: The transport sector in Murundi

Basic Information: Murundi

Murundi is a relatively small country with a population of 19 million and a total area of 85,000 km^2. Murundi has experienced modest economic growth of about 3% of Gross Domestic Product (GDP) for the past 15 years. In 1990 annual per capita income amounted to approximately 600 Euros, which had increased to 750 Euros in 2002 and to 900 Euros by 2007. GDP in 2007 amounted to 100 billion Euros (1 Euro = 100 Murundi dollars).

The significance of agriculture relative to manufactured goods has been declining since the 1980s, and now accounts for 16% of GDP. Manufacturing accounts for 27% of GDP, while the service sector contributed about 57% of overall GDP growth in 2007.

Murundi has an overall budget deficit of 10% of GDP. Annual inflation has been in the region of 10% for some years.

Total tax revenue in Murundi amounted to about 19% of GDP in 2007. Value Added Tax (VAT) amounts to 34% of total tax revenues, income tax for only 17%. Import duties are an important source of revenue, accounting for 11% of total state revenues.

In 2007, total revenues from Environmental Taxation amounted to 0.5% of GDP or 500 million Euros, i.e. approximately 2.5% of total tax revenues. More than half the total revenue from Environmental Taxation Reform (ETR) was collected from the transport sector.

Environmentally beneficial subsidies – for public transport services and water supply and sanitation – amounted to 750 million Euros or 0.75% of GDP, meaning that more revenues are spent on environmental subsidies than raised by EFR measures. The total value of environmentally harmful subsidies in Murundi has not been calculated, but estimates range from 750 million Euros to more than 2.5 billion Euros in 2007.

With reference to the transport sector: the Murundi vehicle fleet is inefficient (high fuel consumption) and high-emitting (few low-emission technologies installed). About 30% of the fleet consists of public transport vehicles (including buses, mini-buses, and taxies) and 35% haulage vehicles – both categories are typically extremely polluting diesel-powered vehicles. The remaining 35% are private vehicles and can be broken down as follows: 55% are old, inefficient, high-emitting vehicles; 10% are newer vehicles, generally also with large engines; and 35% are scooters or motorcycles.

Sheet 8 - Table: Fuel prices and tax rates in Murundi in the transport sector

(100 Murundi dollars = 1 Euro)

	2000	2007	Notes
Crude oil price / barrel[1]	2,200	9,700	There was a rapid price increase between the end of 2007 and mid 2008, from 57 Euros/ barrel end 2007 to 76 Euros / barrel May 2008
Crude oil price / litre	14	64	Refining cost per litre of petrol, diesel and kerosene between 40-60 Murundi dollars
Petrol price / litre	50	80	Prices excluding excise duty, VAT, other taxes
Diesel price / litre	25	50	
Kerosene price / litre	18	34	
Excise duty on petrol %	24	20	
Excise duty on diesel %	4	2.5	
Excise duty on kerosene %	0	1.25	
Petrol sales (x1,000 litres)	310	830	
Diesel sales[2] (x1,000 litres)	2,200	2,600	
Kerosene sales[3] (x1,000 litres)	320	360	
VAT rate %	12%	15%	Diesel exempt
Biofuels			Not used in large quantities in Murundi, not subject to taxation.
Environmental and other taxes on fuels (total)	4%	6%	Biofuels are exempt.
Fiscal measures pertaining to public transport			
VAT rate on public transport tickets	6%	7.5%	
Circulation tax	-	-	Diesel vehicles with more than 5 seats exempt
Average cost of one-way journey on city transport	2	6	(including VAT)

1 Crude oil price represents the price of unrefined oil on the world market. Once oil has been refined, product prices vary from country to country, not least due to substantial differences in taxation. There is no world market price for petrol.

2 Diesel in Murundi is not used exclusively for transport, but also for domestic purposes and to power irrigation pumps.

3 Kerosene in Murundi is used for cooking & lighting purposes by the very poor. The tax system does not differentiate between the end use of kerosene and for this reason it is included here (kerosene is also used as an airline fuel, the use of which is not taxed in Murundi).

Sheet 9 – Aspects for analysis of political economy in own country

1. Macro-economic issues

a. Which are the major sectors of the economy?
   Are they labour, energy resource or capital intensive?
b. What are the environmental weaknesses and strengths of the economy / the sectors?
c. Which sectors could play a major role in the future due to their strong environmental performance?
d. Which sectors create the most economic value added, which the most jobs?
e. To what extent could the environmentally "good" sectors take over a major role in the economy? Can you think of transition policies and scenarios which facilitate this?

2. Legislation relevant to the environment

a. Which rules and regulations exist with regard to energy and resource use, air, water and soil pollution, water and electricity supplies, waste water and solid waste, and any other aspects particularly relevant to environmental degradation in your country?
b. Can you draw up a list of all existing fiscal and legislative measures relevant to these topics?

3. The operation of the fiscal system

a. Are some of the regulations you listed above contradictory?
b. Do they create incentives to cause environmental damage and/or pollution?
c. Are all of the regulations you have listed formal?
   If so, are there other, less formal processes at work as well?
d. Which revenues are collected by national government, which by regional and local government?
e. Do these rules and regulations appear to be working?
   To what extent are they really enforced?
   Do they fulfil their expressed purpose?
f. Is administrative capacity and knowledge such that the fiscal system is operated reasonably?

4. Implementation issues

a. Can you identify existing legislation that could be used as a basis for further development and / or reform?
b. What will the reform of existing rules entail?
   Would reform be politically feasible and cost-effective?

Exercise 2: Development of a Policy Reform Proposal for the Murundi Transport Sector

Duration (*80-100 min)*

Structure

Case Study exercise: group work and plenary session

Work aids

Sheet 10: Non-fuel fiscal measures directed towards transport in Murundi
Sheet 11: Income and fuel use in Murundi

Instructions:

You are teams of advisors to different Ministries in Murundi (Finance, Environment, Transport, etc.) and asked by your ministries to

- analyse the policies in place in the Murundi transport sector for possible contradictions or omissions (by answering the questions below) and
- develop a proposal for policy reform.

For this, you are going to examine and analyse fiscal legislation in place in the transport sector in Murundi. You should:

- identify strengths and weaknesses in current legislation
- pinpoint environmentally harmful measures which foster environmentally damaging behaviour
- based on these conclusions, draw up a reform proposal for the Murundi transport sector.

Use the information in the tables *Sheets 7 – 11* and visualise your results on the FC / board.

You can use your answers to the following questions to help to structure your EFR proposal.

1. What can you conclude about the relationship between income and energy use in Murundi?
2. Who are the winners and losers from fuel price subsidisation?
3. Are there areas where potential sources of tax revenue are not targeted effectively?
4. Can you think of any implications for the general budget?
5. How could you increase or reform existing tax rates?
   Which areas should be targeted for environmental fiscal reform?
   Which compensatory measures would you consider, and for whom?

Sheet 10 - Table: Non-fuel fiscal measures directed towards transport in Murundi

*All amounts are in Murundi dollars (100 Murundi dollars = 1 Euro)

	2000	2007	Notes
Annual circulation tax	20,000	20,000	Diesel vehicles with more than 5 seats are exempt
Vehicular sales levy	0	10%	10% of the selling price, payable by the seller
Road accident fund	350	250	Payable on top and at the same time as circulation tax
Airport departure charge	500-1,500	500-2,500	Rates vary according to aircraft capacity & destination
Road licensing fees	3,000/yr	5,000/yr	Flat rate payable on all vehicles
Public transport electricity exemptions	Electricity for rail transport is VAT exempt (all diesel is VAT-exempt)		
Fuel price cap on petrol, diesel and kerosene.	Fuel prices capped at increases of no more than 2 Murundi dollars per month per litre.		

Sheet 11 - Table: Income and fuel use in Murundi

Product	Percentage of total income spent on fuels by income quintile (Q)				
	Q 1	Q 2	Q 3	Q 4	Q 5
Kerosene	37	24	11	11	8
Diesel	6	6	5	8	10
Petrol	0	6	3	8	11
Total % income spent on fuel	43	36	19	27	29

Poorest → Richest

Guidance to reading the table (see number highlighted yellow):

This figure shows the percentage of total income spent on diesel by the second-richest population group. In the table, the population is divided into five groups of equal number for analytical reasons. Each group is referred to as an “income quintile”.

Module 4: Stakeholder Interests in the case of Fossil Fuels and Energy

Session 4-1: Introductory presentation

Objectives:

Participants

- have an overview of relevant information on fossil fuels and energy

Duration (45-60 min)

Structure – Plenary Session

1. Ppt. presentation 3, *(20-30 min)*
2. Discussion in plenary, esp. relevance for own country *(20 -30 min)*

Session 4-2: Case Work: Dismantling Environmentally Harmful Subsidies in "Nira"

Objectives:

Participants are able to

- sketch out some policy proposals for dismantling Environmental Harmful Subsidies (EHS) in the fossil fuel and energy sectors,
- consider ways of dealing with stakeholder opposition to these proposals,
- develop creative solutions.

Exercise: Developing a strategy to deal with stakeholder concerns in Nira

Overall duration: 150-180 min

Structure

Case Study exercise: group work and plenary session

Training aids:

Sheet 12 - Background Information: Nira – an economy dependent on subsidisation
Sheet 13 - Energy Sources and their uses
Sheet 14 - The impact of reform on stakeholders and possible policy responses
Sheet 15 - Policy proposal form

Task

The current Nira government has committed itself to dismantling fuel and electricity subsidies.

However, even though these policies are rational and necessary – present policies are neither fiscally nor environmentally sustainable – they are expected to meet with emotional opposition when they are announced. Careful strategic planning is needed to mitigate the impact of this opposition. The reactions of all stakeholder groups within society must be considered and ways of dealing with them thought through before the policies are announced.

Therefore, the government has asked your research / policy advice institution to develop a strategy to deal with stakeholder concerns and objections to fuel and energy price rises – in Nira, by means of compromise, negotiation, rational argument, public information campaigns, and any other strategies you can suggest.

Instructions

Please form 3-4 teams. Each team will develop a detailed reform agenda for the management of the reform process, which you will present to the Government. This reform agenda should be based on:

- A **list of all stakeholders** affected by the reform, including analysis of their interests, predicted responses
- Proposals for dealing with these responses, including compensatory measures
- An analysis of the advantages and disadvantages of your proposal for the policymaker
- A **policy proposal** for possible ways of starting to dismantle fuel and electricity subsidies (see Sheet 15)

Remember to take the different interests of stakeholders as regards transport fuels and electricity into account.

The tables on the following pages (Sheets 13 and 14) will help you structure your ideas.

The table “Energy Sources and their uses” (Sheet 13) will help you to develop ideas for a policy proposal, including information on its advantages and disadvantages, and will help you to consider compensatory measures required.

The table “The impact of reform on stakeholders and possible policy responses” (Sheet 14) below is for you to note down the interests of all stakeholders, put forward policy approaches to deal with these interests, and mitigate/counteract opposition to such reforms.

Finally, you should complete sheet 15 which should summarise your ideas for your policy proposal and outline your most important ideas for the management of the reform process.

Please visualise your discussion and results on FC.

You should be prepared to give a professional presentation of your proposal to government afterwards.

Sheet 12 - Background Information: Nira – an economy dependent on subsidisation

In the past, subsidies have been a good way for successive Nira governments to foster political support, and been therefore reluctant to make significant changes. Economic structures, production and consumption patterns hence have over time adapted to subsidised prices fuel and energy prices.

The newly elected Nira government has finally decided to reverse these policies by dismantling energy subsidies in order to avoid further resistance to change and reverse the tendency of the subsidies becoming 'locked in' to the economy.

As fears increase that the government might instigate measures to realise its reform plans, many powerful stakeholders, most notably energy-intensive industries and the middle classes, have started to vigorously defend the need for maintaining fuel and energy subsidies and have been building up considerable lobbying power in the process.

Nira has some of the largest oil reserves in the world and is a major oil exporting country. Petrol and diesel prices are extremely low at 0.20 and 0.25 Euro per litre respectively – thanks to direct and explicit fuel subsidies amounting to approximately 18% of total government spending.

The high cost of fuel subsidies in Nira is partly due to a lack of private refinery capacity in the country, being over 90% of the existing refinery capacity under state control. Although a major exporter of crude oil, Nira has to import about 30% of the petrol and diesel used within the country – at world market prices. At least in part due to the false incentives for inefficient fuel use created by such subsidy policies, domestic energy demand is increasing by 5% annually. Air pollution, particularly from vehicle emissions, is becoming an increasing problem in Nira's largest cities.

Electricity prices for private consumers and for industry are also heavily subsidised, amounting to a further 9% of government spending. 75% of electricity is generated using natural gas, 18% using oil, and remaining 7% from renewable energy sources. Domestic demand is increasing by 8% annually, in spite of 21% of the population not being connected to the national grid.

Major industries in Nira include petroleum, petrochemicals, fertilizers, cement, food processing, and ferrous and non-ferrous metal fabrication. In 2007, GDP amounted to approx. 177 billion Euros, per capita GDP 7,830 Euros. Unemployment reached 13% in the same year, when almost 20% of the population was living below the poverty line. Potential welfare gains from subsidy removal have been estimated to be worth as much as 20% of GDP.

Nira's fuel pricing policy has also become a problem for neighbouring countries, as low fuel prices have created incentives for fuel smuggling and are depriving Nira's neighbours of essential fuel taxation revenues.

Sheet 13 - Table 1: Energy Sources and their uses

Energy source	***Uses?***	***Compensatory measures & comments***
Kerosene	- transport - cooking and lighting	
Liquid Petroleum Gas (LPG)	- cooking - transport (rare)	
Automotive diesel	- transport	
Petroleum (regular & super)	- transport	

Energy source	***Uses?***	***Compensatory measures & comments***
Electricity (from coal, gas, renewables)	- manufacturing - communication - power for trains & trams - lighting & heating - pumping water	
Heavy diesel	- fuel for tractors, construction vehicles, agricultural irrigation pumps, etc. - heating and lighting	

Sheet 14 – Table 2: The impact of reform on stakeholders and possible policy

Stakeholder	***Impact felt due to reforms to electricity and transport fuel subsidies***	***Possible policy responses?***
The poor		
Non-poor households		
Administration		
Politicians		
Fuel producers and distributors		
Energy Intensive Industries		
Other industries		
NGOs		
Other?		

Sheet 15 – Policy Proposal Form

Division: Nira, date: ……..
Reference number:
Head of Division:
Person in charge / clerk:
Tel.:

Memorandum to the Minister

Deadline:

Subject:
Reference:
Appendices:

1. **Objective of the memorandum**

2. **State of affairs**

3. **Proposal / recommended decision**

4. **Pertinence for external communication (media)**

5. **Pertinence for Internet**

Signature

xxxx is supporting this memo

II. Appendices

Module 5: Environmental Infrastructure

Session 5-1: Introductory Presentation on Environmental Infrastructure

Objectives

Participants

- have an overview of the main instruments of environmental infrastructure
- understand the relevance of possible EFR solutions for organising environmental infrastructure effectively and efficiently
- have reflected on the relevance of these issues for their own country.

Duration 45 - 60 min

Structure – Plenary session

1. Ppt. presentation 4 *(20-30 min)*
2. Discussion in plenary working through the questions below *(20 -30 min)*

Session 5-2: Provision of water supply and sanitation services (WSS) to an informal settlement in Fula

Exercise: Developing innovative policy proposals to improve and extend water supply & sanitation services in Fula

Objectives

Participants

- have applied WSS instruments of environmental infrastructure
- understand the relevance of possible EFR solutions for organising environmental infrastructure effectively and efficiently
- have reflected upon the relevance of this session for their own country.

Duration 90 min

Structure

Case Study exercise: group work and plenary session

Training Aids

Sheet 16*:* Background Information on Fula – water and sanitation
Sheet 17*:* Table: Key facts and policy considerations

Task

Your are a team of consultants specialised in WSS services.

The government of Fula has asked you to discuss the applicability of possible EFR policy instruments in order to improve the provision of WSS services to informal settlements (shanty town areas) of the city of Fula, in Fulador, South America.

Your client, the new, very socially considerate and motivated Government, has encouraged you to also consider innovative and complex solutions, as many different factors and compensatory measures have to be taken into account due to the long lasting accumulation of problems.

Instructions

- Read the background information carefully (*Sheet 16*)
- Complete individually the table “Policy Issues” *(Sheet 17)* below to draw up a list of issues which policy makers should consider when drawing up possible EFR policies to facilitate the supply of water and sanitation services for the illegal settlements of Fula.
- Focus on ways of escaping the “low level equilibrium trap”.

- After completing the table individually, please compare and contrast your results with the other members of your team. Are there major discrepancies? Why / why not?.
- Based on your results from the first part of the exercise (Sheet 17), develop a package of EFR to improve water supply and sanitation in the poor. Please include accompanying measures necessary to address equity concerns and take into account required administrative capacity (lack of interest on the part of the administration, corruption, etc.).
- Visualise your proposal on the FC

Sheet 16 – Background Information on Fula – Water and Sanitation

Fulador: Fulador is a relatively large country in South America, with a rapidly urbanising population of approximately 180 million. Fulador's government has failed to keep up with this rapid urbanisation. About 21 million residents of slum areas in Fulador's three main cities – Fula, Roma and Sandby – do not have access to safe water, and twice as many lack access to sewerage networks or septic tanks. The urban poor account for 70% of the 25 million people living below the poverty line in the country.

Fula: The capital city Fula has a population of 9 million. Water and sanitation services in the poor, overcrowded slum areas in all of Fulador's cities are non-existent. Approximately 3 million of these city dwellers are relatively recent migrants to the city, living in informal and illegal settlements. Less than 15% of these slum dwellers have access to safe water and less than 8% have access to sewerage networks.

Instead of clean water piped directly to their homes, residents often pay ten times the legal rate from water pirates who tap illegally into the main systems. The lowest income quintile[4] spend approx. 5% of their total expenditure on water services.

Instead of sewage being piped safely away for sanitary treatment, wastewater flows in open drains or is dumped into natural drainage channels to feed polluted streams and lagoons. This is having a serious impact on the health of slum dwellers, and infant mortality rates in slum areas are 20% above the national average.

Ostensibly due to fears that the poor will not pay for water and sanitation services, state water companies have thus far made little effort to connect slum areas, focussing instead on connections for wealthier neighbourhoods.

Water and sanitation services in Fula are caught up in the so-called "low level equilibrium trap", a kind of vicious circle of poor services. Even in wealthier areas, user charges do not cover the cost of providing the service and state subsidies are required as a result. Chronic funding deficits have resulted in infrastructure being poorly maintained and services being degraded, which has reduced willingness-to-pay and thus revenues still further, leading to yet more falls in the quality of the service.

[4] The poorest 1/5 of the population.

Sheet 17 - Table: Key facts and policy considerations

Key facts	*Comments / considerations*

Session 5-3: Policy Proposals for Solid waste management in Fula

Exercise: EFR approaches to solid waste management

Objectives

Participants

- have applied instruments of environmental infrastructure related to waste management
- understand the relevance of stakeholders and their implication for achieving possible EFR application
- have reflected relevance for own country.

Duration 90 min

Structure

Case Study exercise: group work and plenary session

Training Aids

Sheet 18 – Background Information on Fula – solid waste
Sheet 19 – Policy proposals from consultancy for waste management

Task

You are a consultants working for a development co-operation project on Waste Management.

The municipal government in Fula has decided to take action to improve its solid waste management processes. As a first step, the government's environment department decided to get in touch with a consultancy, which drew up the following list of proposals. The municipal president now would like to have a second opinion from you and asked you to assess the consultancy proposals and give recommendations which options should be pursued in more depth.

Instructions

In small groups, answer and visualise the questions below on a FC:

- Discuss the advantages and disadvantages of each option.
- Which additional measures are necessary to ensure that the proposals are effective?
- Which proposals are worth more serious consideration? Why?.

Sheet 18 – Background Information on Fula – Solid Waste

Inadequate disposal of solid waste in Fula is causing a number of environmental and public health problems. Only the wealthiest areas of the city enjoy waste collection services, the remainder have access to crude and illegal open dumping grounds or dump their rubbish outside designated areas in water channels, in the street, and in open areas.

The most important elements in household solid waste in Fula (60% of total solid waste in the city) are paper, vegetable matter, plastics, metals, textiles, rubber, and glass. Businesses make up the remainder: hospitals, industry, restaurants, offices, and shops. On average in the city, only one third of all solid waste generated is collected.

Open dumping sites, whether designated or illegal/spontaneous, pose a serious health hazard, as they are breeding grounds for flies and vermin, contributing to the spread of disease, and are not used exclusively for household wastes, but also for hazardous wastes from other sources (low-grade hospital waste, car batteries, etc.). Thus, waste dumped pollutes the immediate environment, as well as nearby watercourses, groundwater, lagoons and soils, and contributes to flooding. Waste that is burnt also contributes to air pollution.

Scavenging activities on such open dumps are not controlled, and have a serious impact on the health of the scavengers on such dumps. However, waste scavenging and collection is for many poor people their sole source of income, and closure of dumping grounds for public health reasons would have a severe impact on their livelihoods. Similarly, many waste pickers roam the streets collecting and selling on valuable rubbish, while itinerant waste buyers collect waste from door-to-door.

As is the case for water supply and sanitation in Fula, solid waste collection services are concentrated on wealthier areas, due to their perceived ability to cover at least a proportion of the costs for such services. Municipal government does not have access to financial resources to fund improved coverage.

Further causes of poor waste management in Fula include:

- Use of inappropriate and unreliable technologies
- Streets in slum areas are too narrow for large collection vehicles to pass through
- Technological problems with vehicles often result in periods without waste collection
- Poorly funded and badly managed municipal government
- Responsibilities between local /national government are not clearly defined
- Fula’s municipal government is badly organised, collection and management policies are both poorly implemented and inconsistent with improving the service
- Government agencies lack in-depth knowledge of waste management
- Thus, information for the general public is also lacking, the environmental impact and public health hazards caused by illegal dumping, scavenging, etc. are not widely known
- Very few recycling facilities
- Necessary infrastructure (collection areas, recycling plants) is almost non-existent,

although Fulador does have a relatively well-developed paper manufacturing industry

Sheet 19 - Policy proposals from consultancy for waste management

1) Negotiation of private sector participation in waste collection

Private sector participation could be negotiated to attract investment to the sector in the form of a service and management contract for solid waste collection. These companies would also be entitled to levy and collect associated service charges.

2) Starting Micro- or Small Enterprises (MSEs)

MSEs could be launched within local communities to set up, operate and manage community waste collection schemes. These could organise the transportation of waste to transfer points, where municipal waste collection services would take over and transport waste to designated waste sites. MSEs would be entitled to levy and collect service charges. The introduction of MSEs could also represent a means of formalising the informal waste collection sector.

3) Improvements to existing municipal waste management schemes

The city authorities could introduce a service charge on all waste collection services to households and businesses. Revenues raised can be used to fund infrastructural improvements in waste collection, such as provision for waste collection vehicles designed to collect waste in slum areas, and improved landfill site management. Once waste collection services are in place, service charges can also be collected in slum areas.

4) Resource recovery and recycling

This proposal encompasses introducing better waste sorting systems to reduce the amount of waste produced (sorting out metal, glass and paper from solid waste) and the introduction of deposits on glass bottles. Organic waste materials, which make up roughly 50% of total solid waste, are to be composted. Between them, these measures could reduce the amount of solid waste going to dumps by at least 60%.

Here, too, the consultancy has proposed that policy-makers make use of the existing informal sector, which usually recycles more efficiently than the formal sectors (not least due to its many years of recycling experience). In addition, the informal sector does not rely on cost-intensive methods and, because it is directly reliant on quantities recycled for income, the sector tends to recycle very efficiently.

Session 5-4: Learning from Fula exercises for own country

Objectives

Participants

- understand the relevance of possible EFR solutions for organising environmental infrastructure in own country effective- and efficiently.

Duration: 90 min

Structure

Individual / group reflection exercise and plenary session

Instructions

Please reflect individually (or in country / institution teams) upon what you learned from the Fula exercises for application in your own country by discussing the following 5 questions.

1. What are the *priorities for action* in the environmental infrastructure in your country?
2. Which *changes / developments* are needed to realise improvements?
3. What EFR *measures* could help to improve environmental infrastructure in your country?
4. To what extent are the *solutions* you found for Fula relevant to your country? Do you face similar problems?
5. What issues and/or sectors *not discussed* in the case sessions need to be taken into account in rural areas?

Please visualise results on FC, possibly taking into account results you produced during the introductory session 1-1 and during later sessions.

Module 6: Application of EFR Learning to own Country

Session 6-1: Preparation of a personal Action Plan

Objectives

Participants

- Have integrated the learning from the EFR training into an Action Plan
- Have collected learnings visualised during transfer / application sessions

Duration 90 min

Structure

Individual / group work and plenary session

Training Aids

Sheet 20 – EFR Action Plan

Instruction

Please elaborate during the following 45 minutes a personal Action Plan which contains the findings you visualised during the different sessions, esp. the application parts, and your final conclusions.

Please visualise on the Action Plan format on the FC prepared for you.

Sheet 20 – EFR-Action Plan

Measure	Objectives	Indicators	Actions/ Activities	Responsible	Time	Priority

Session 6-2: Follow up and Evaluation

Objectives

Participants

- have reviewed programme of training
- evaluated the achievement of results
- know about possible follow-up to the training.

Duration 30 min

Structure

Plenary session

Training Aids

Evaluation Sheet, certificates

Objectives of the EFR training

- Participants have understood the definitions, concepts, and instruments of EFR
- Participants are able to apply this know-how to own country / institution
- Participants are able to start applying this know-how within their own sphere of influence after the training with the help of an Action Plan.

Success indicators of the EFR training

1. Participants evaluate the EFR training positively (see evaluation sheet)
2. Working documents (flipcharts, cards, etc.) show that participants have participated actively and have understood the messages of the training (see photo-documentation and documentation formats)
3. Participants have elaborated an action plan during the training, which indicates clear further steps to be taken subsequent to the training (see *Action Plans*).
4. 50 % of the participants apply their Action Plan / have started the application of their action plan 2 months after the training (see either written enquiry or follow-up meeting)

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Annex

Annex 1: Executive Summary of the OECD EFR Guidance[5]

What is Environmental Fiscal Reform?

"Environmental Fiscal Reform" (EFR) refers to a range of taxation and pricing measures which can raise fiscal revenues while furthering environmental goals. The international community has committed itself to the Millennium Development Goals (MDGs), including the overarching target of halving extreme poverty by the year 2015. To help achieve the MDGs, developing country governments need to mobilise revenue to invest in schools, health care, infrastructure and the environment.

EFR can play an important role in pursuing the MDGs of "halving absolute poverty" and of "reversing the loss of environmental resources by the year 2015". Indeed, the UN Summits on Financing for Development and on Sustainable Development in 2002 recognised the potential contribution of EFR-related approaches. The latter stressed that poverty reduction and improved environmental management go hand-in-hand.

How can EFR contribute to poverty reduction and development?

EFR can contribute to poverty reduction directly by helping address environmental problems – such as water contamination and air pollution – that impact the poor. EFR can also help indirectly, by generating or freeing up resources for anti-poverty programmes in such areas as water supply and sanitation, or for pro-poor investments such as health and education.

EFR is an important part of the development policy tool kit. EFR approaches and instruments complement and strengthen regulatory and other approaches to fiscal and environmental management.

The multiple benefits of EFR

Fiscal Benefits	Environmental benefits	Poverty reduction benefits
a) Revenue mobilisation	a) Pollution prevention and improved natural resource management	a) Improved access to water, sanitation and electricity service
b) Reduced distortions	b) Mobilisation of funds for investment in pollution control and safe disposal of waste	b) Mobilisation of funds for pro-poor investments (e.g. education)
c) Reduced drains on public finances	c) Mobilisation of funds for enforcement activities	c) Freeing up financing to address environmental and other problems that affect the poor

[5] OECD DAC: Environmental Fiscal Reform for Poverty Reduction, DAC Guidelines and Reference Series, Paris 2005.

Ecological Tax Reform

This module provides a further example of the application of EFR instruments, this time in relation to the improvement of environmental infrastructure.

Basically, the principle of ecological tax reform is an element of an EFR: Environmentally harmful activities such as energy consumption and transport are taxed and thus rendered more expensive, providing incentives to change behaviour and invest in efficient and renewable technologies. Revenues raised are used to make labour cheaper and thus create employment or to fund other national priorities such as poverty reduction and environmental infrastructure. In this way, the tax helps protect the environment and new jobs are created at the same time and/or poverty is reduced e.g. while environmental infrastructure is built up. Eco-taxes should increase in a series of gradual but continuous steps. Thus, energy users or/and polluters are able to adapt over time. Petrol-saving vehicles, switching from cars to public transport, better building insulation, saving of electricity and improved energy efficiency in production are all positive effects of the ETR.

Annex 2: EFR Instruments and Country Examples

Definitions of EFR Instruments (long version)

Instruments	Definition			
Environmental taxation	Environmental tax is a tax whose tax base is a physical unit (or proxy of it) that has a proven specific negative impact on the environment (OECD).	Taxes are payments to the general government budget with no specific return to whoever pays the tax (OECD, 2003). Environmental taxes can be **imposed on certain types of emissions**, inputs, exploitation and products (GTZ, 1995). **The tax base should be decided on according to policy objective and feasibility**. For example, if emissions cannot be taxed directly due to monitoring problems, a "process input" tax can be a substitute (GTZ, 2006). **Governments or organs of state direct the use of revenues** **No direct benefits accrue to individuals** in exchange for their payments **Payments are enforced** in terms of legislation		
	Definition	**Characteristics**	**Strength**	**Weakness**
- **Taxes on Natural resource extraction, e.g. timber** **See examples: 5, 9**	**Natural resource extraction tax:** Collection of economic rents from the extraction of non-renewable resources.	**Base:** Volume or commercial value of resources extracted, or the profits of the company extracting the resource **Allocation:** Various, but particularly the general budget. Royalties are important sources of resources for many governments. **Examples:** Royalties for extraction of non-renewables (e.g. minerals, crude oil, natural gas). (OCED, 2003)	**Provides regular and reliable source of income**. As systems for tax collection usually exist, there is **no need to set up a new collection system** or bureaucracy. Establishing fiscal instruments with a wide base means that **protected area managers are less tied to individual donors**. Taxes that capture the economic benefits from resource uses, **guide the economy towards a more sustainable path**. Green taxes can potentially **create "double dividends"** by lowering existing taxes, such as labour taxes.	A major challenge will consist in **keeping the proceeds earmarked for conservation**. **Need for strong institutional and fiscal capacity.** It may be difficult to introduce new taxes Increasing the power of local authorities or protected area managers may **call for a change in existing legislation**. Capturing full environmental costs and benefits is **information intensive.** New instruments **may result in creating perverse incentives.** The instruments should be sufficiently flexible so as to allow "trial and error" approaches.
- **Taxes on products, e.g. pesticides, batteries**	**Product tax:** Payments are levied on the units of harmful substance	The product tax may also be levied per unit of the product, if the objective is to reduce usage	**Environmental goals are achieved at lower costs:** Environmental improvements happen in the best place	**Evasive actions:** Re-locating activities to places outside of the regulated area remains probably the

See examples: 1, 3, 8, 13, 15	contained in products: for instance, a carbon tax is based on the carbon content of each particular fossil fuel (or an energy tax is levied as the best and easy to administer proxy).	of the product generally (e.g. a tax on pesticides) (EEA 2006).	and with the best technology that yields the environmental goal with the lowest costs. **Promote long-term resource efficiency activities:** Eco-taxes promote long-term resource efficiency activities and provide continuous incentives for research in environmental technologies, especially if the businesses perceive the tax to persist in the long term. **Mobilisation of revenue:** Especially for developing countries that have a small tax base and face difficulties in raising government revenues, eco-taxes can be an attractive option to mobilise government revenues and align environmental and economic goals. **Reduce distortions:** Eco-taxes can be a relatively harmless way to raise government revenues in terms of economic efficiency, allowing reductions of other more harmful taxes that cause more distortions ("double dividends"), especially taxes on human labour (Kerr, 2001).	most frequent evasive action taken, leading to economic losses and undermining the environmental effect. **Illicit behaviour and corruption:** Companies can try to avoid the eco-tax by illicit behaviour, e.g. the falsification of pollution records or engagement in corruption with government officials. **Information gaps and political influence:** In order for the policy to achieve its objectives in an efficient way, polluters from a range as wide as possible need to be included. This can be hindered by data gaps on emission sources and resistance from influential lobbies, leading to potential exclusion of critical industry sectors or exclusion of a large informal economy from the tax. **Contradictions with subsidies** provided for important but scarce environmental goods (like water) for social policy reasons. An eco-tax in this case could be perceived as reducing redistribution and might face political opposition.
- **Taxes on pollutants and emissions, e.g. Sulphur dioxide** **See examples: 2, 14**	**Emission tax:** Payments are directly related to the measurement (or estimation) of the pollution (i.e. air or water pollution, land contamination, noise) caused (EEA 2006).			
	Definition	**Characteristics**	**Strength**	**Weakness**
Charges and fees **See examples: 12, 16, 17**	Fees / charges are payments for specific services given to whoever pays the fee/charge.	**User Charges cover the cost of collective services** associated with the treatment/disposal of the pollution associated with the consumption/use of a product. Primarily a financing device for the service in question (in other words, the user/polluter pays the levy in return for a compulsory service).	A **marketable service** is provided to **identifiable beneficiaries.** **Direct and proportional benefits** accrue to beneficiaries in exchange for payments. **Transactions take place in a willing buyer willing seller market.** The polluter has the choice of using the **lowest-cost technology and achieving the optimal degree of pollution abatement** (below the standards).	**Social considerations**: Charging for services previously provided on a free basis can lead to concerns about the accessibility of services to the poor, with water user-charges being among the most debated issues. Concerns exist that charges might be borne at disproportionate levels by the poor, depending on the concrete pricing mechanism. A solution is to apply fees only above

		Base: quality and quantity of service provided. **Allocation of Proceeds:** Various, but frequently to the Establishment/ Operation/Management of the corresponding infrastructure/service. When relevant service was previously provided for free by a public entity, the charge/fee frees up budgetary resources. **Examples:** - Charges for energy or water supply - Charges for the collection and treatment of solid waste (including toxic and hazardous wastes). - Charges on sewage water. The terms "user fee/charge" are frequently employed for the non-commercial use of natural resources. (e.g. access to national parks, natural hunting or fishing grounds). **Distinction between taxes and charges:** Under German tax law, revenue from charges must be used for specific purposes, while taxes can be absorbed in the general budget.	**Emission charges** can provide **strong incentives for sustainable production.** Through the price mechanism, fees and charges address the financial interest of the target groups **Cover governmental expenses:** Full cost recovery can make institutions financially self-sustaining, thus freeing money for other expenses. **Easy to monitor** **Individual fees and charges reward careful users** Factors favouring the use of **emission charges** are: - clear differences in abatement costs for different sources of emissions; - easily identifiable emission sources; - low-cost methods of monitoring emissions; - technological potential for reducing emissions. **Product charges** are preferable where - products are manufactured in large numbers and are easily identifiable; - existing administrative structures can be used (e.g. to collect VAT); - product manufacture, resource exploitation or waste disposal involve emissions whose sources are diffuse and difficult to document; - consumers can switch to other products, so that there is a high price elasticity of demand.	a certain level of usage volume. **Trade-off between social issues and environmental effectiveness:** Political considerations regarding social consequences of charges may lead to charge rates that do not cover the actual costs of the service provided and/or which are insufficient to have a significant impact on resource efficiency improvements. **Managerial interest and attitude:** Fees and user-charges can conflict with the interest of public service providers, as they cause opposition among their clients, require organisational adaptations, and lead to accountability pressure. If charges reduce demand for services, public service providers will lose clients, budgets and influence. **Vulnerable to illicit behaviour and corruption**

	Definition	Characteristics	Strength	Weakness
Subsidy policy - **Dismantling perverse subsidies** - **Green subsidies** - **Targeted subsidies** - **Cross-subsidies** **See examples: 1, 4, 7, 10, 11, 16**	A form of explicit financial assistance to polluters or users of natural resources, e.g. grants, soft loans, tax breaks, accelerated depreciation, etc for environmental protection (OECD, 2003).	**Governmental institutions can provide financial support** to households or private enterprises to promote resource-efficient production and services. There are two main categories of financial aid: **Direct subsidies** such as financial grants or credits. These facilitate investments in resource efficient technologies by partly covering the costs incurred by businesses or households. **Indirect subsidies** in form of (i) differentiated tax rates or tax exemptions and (ii) provision of goods like power or water and services below real, i.e. market, price. Indirect subsidies are used to lower the price of resource efficient devices, items and services to improve their competitiveness and to enhance their commercialisation. Subsidies are used either to **promote innovations**, or to **facilitate the adaptation to new legal frame** conditions (norms and standards) or to preserve environmentally sound structures and production processes (GTZ, 2006).	**Uses financial interest of target groups:** Subsidies are a potent economic instrument to influence investment and purchasing decisions, as they directly reduce expenditures and increase income and profitability of the production of goods and services. **Immediate effectiveness**: Subsidies act immediately as soon as they are provided. Loss of time to promote resource efficiency is comparatively low. **Competitiveness advantage for enterprises:** When awarded on a national or regional level, subsidies offer enterprises advantages in international competition. They can contribute to creating on the medium term a powerful and internationally competitive industrial branch, and they can prevent companies from relocating their factories abroad. **Support innovation at an early stage:** Subsidies facilitate the market launch of innovation at an early stage as they reduce the costs of pioneering products and increase knowledge among customers quickly **Address financial needs of SMEs:** Subsidies are especially advantageous for small- and medium-sized enterprises (SMEs) which have only limited financial capabilities to internally cross-subsidise new products with revenues from well-established products.	**Interfere with market results:** Subsidies interfere with normal market development. They alter the price situation on the market by lowering the price for certain products or services. In this manner, less profitable production and services can displace more economic products and services resulting in net welfare losses. **Unequal treatment of enterprises:** Subsidies create a group of beneficiaries but also a group of disadvantaged. Among the latter are often economically working enterprises that may feel discouraged as they finance their less economic competitors through taxes. **Reduce innovation pressure:** Subsidies weaken the motivation of beneficiaries to become more economical, as long as the subsidies guarantee sufficient revenue. In this way they can hamper the development and introduction of further innovations. **Burden for public budgets:** Subsidies burden public budgets. Especially countries that have a small tax base and face difficulties in raising government revenues, subsidies reduce the availability of financial resources for core tasks of the state such as education, infrastructure, security etc. **Vulnerability to illicit behaviour**
	Definition	**Characteristics**	**Strength**	**Weakness**

Emission/ certificate trading **See example: 6**	In certificate trading systems governments establish a maximum quantity of emissions to the environment in a region and issue certificates or permits allowing certificate holders to emit pollutants or the use of environmental goods up to the defined maximum.		**Environmental goals are achieved at lower costs:** Environmental improvements happen in the best place and with the best technology that yields the environmental goal with the lowest costs (Tietenberg, 2003). **Promote long-term resource efficiency:** Trading systems promote continuous resource efficiency improvements and research in environmental technologies, especially if the number of certificates is reduced in a predictable manner over time. **Certainty to achieve environmental goals:** The government can set the amount of certificates autonomously. The level of emissions cannot exceed the amount of certificates if actors are compliant, even with unexpected economic growth and new emission sources. **Freedom of allocation:** The efficiency of the instrument does not depend on how certificates are initially allocated. The allocation mechanism can thus be used to reach other political goals: Auctions can be used to raise government revenue; grandfathering can help to buy political support from businesses.	**Reliance on other policy instruments:** Certificate trading relies on government's capacity to sanction businesses in case of non-compliance. Consistent measurement and enforcement of compliance rules has proven necessary for programmes to yield the environmental and economic benefits envisioned. **Functioning market for certificate trading required:** Markets for certificate trading work only if sufficient supply and demand of certificates exists and is expected to exist in the future. **Evasive actions:** Re-locating activities to places outside of the regulated area remains probably the most frequent evasive action taken, leading to economic losses and undermining the environmental effect, especially as activities are likely to be shifted to a country with lower environmental standards. **Increasing concentration:** Better-capitalised businesses can buy out smaller certificate holders and thereby gain undue market power (Tietenberg, 2003).

EFR Country Examples

1. EFR instruments to desulphurize electricity generation in China

In China, electricity pricing measures have been implemented to reduce SO_2 pollution. Since the end of 2004, the preferential grid price of desulphurized electricity has been Renminbi (RMB) 0.015 per kwh higher than non-desulphurized electricity. In addition, in 2006 the end-user price of desulphurized power was raised by an average of RMB 0.025 per kwh, to spread the cost of desulphurization between plants, the grid and end-users. Importantly, monitoring systems are also in place to ensure that these increases are enforced.

At the end of 2004, the total desulphurization capacity of China's power plants was 30 million kilowatts, incentivised by the preferential desulphurized electricity price. Desulphurization currently costs RMB 2.475 billion (US$ 344 million) annually, but the benefits are many. As a result, SO_2 emissions are dropping by 1.8 million tons per year – already 70% of the target set out in the 11th Five Year Plan. These reductions have cut the cost of environmental damage by RMB 36 billion (US$ 5 billion). Savings have also been made for the power industry due to lower pollution levy payments, which have been reduced by RMB 1.08 billion (US$ 150 million), the current rate being RMB 0.6 per kg of SO_2. In addition, desulphurization facilities worth RMB 8-13.4 billion (US$ 1-1.9 billion) have been built at a cost of RMB 300- 500 per kW, or US$ 42-70 per kW.

Source: GTZ: EFR Conference proceedings, 2008, p. 28

2. A well thought out EFR measure – the waste water levy in South Africa

Water is scarce in South Africa. In an attempt to improve the quality of the country's water resources, the South African Government, led by the Department of Water Affairs and Forestry, has proposed a levy on water effluent as part of its evolving water pricing strategy. It is envisaged that the Waste Water Discharge Charge System will apply to all registered point source emissions into watercourses. The proposed system has both a cost recovery and revenue raising component and a deterrent component (a tax/levy on effluent). The intention is to heavily penalise effluent loads over a certain concentration. Tax rates will be progressive, taxing the largest emitters highly to create strong incentives to reduce effluent loads. Some of the revenues will probably be used for remediation purposes. For implementation of the proposal to be successful, it is essential that the system is kept manageable particularly with respect to accurate monitoring of effluent loads and the granting of sufficient independence of regulating bodies. It must also be effectively integrated into the existing system of licensing and water use authorisations. Even if these factors are taken into account, it will be difficult to capture all forms of water pollution, particularly from diffuse sources.

Source: South African Treasury's draft policy paper on EFR: A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa, published in April 2006. Available for download at: http://www.treasury.gov.za.

3.

Coalition-building to phase out unleaded petrol in Thailand

In 1991 the Government of Thailand – pressed by concerns about the seriously harmful effects of lead pollution on the population and the environment – embarked on an ambitious program to phase out the use of leaded gasoline. This was a complex task, impacting on many sectors. However, the Thai policymakers managed to surmount the obstacles encountered and successfully completed the process in four and a half years, one year ahead of schedule. A crucial success factor was reliance on fiscal incentives to favour unleaded gasoline. To encourage the switch to unleaded, the retail (pump) price was set at B 0.3 (USD 0.012) per litre less than that of leaded gasoline. This policy was introduced with a collaborative approach involving key stakeholders, such as government agencies, representatives of oil companies, and automobile manufacturers. Success was crucially dependent also on governmental institutions taking vigorous leadership and managing all steps of the process, including setting target dates for implementing key actions, and continual monitoring and follow-up evaluation.

Source: http://www.oecd.org/dataoecd/14/25/34996292.pdf.

4. The impact of Liquefied Petrol Gas (LPG) subsidies in India

India subsidises small cylinders of LPG. Initially, this led to large distortions in energy markets as well as rationing, so that in 2000 12 million households were on the official waiting list for subsidised LPG and unofficially 30 million were waiting to be supplied. However, according to the Ministry of Petroleum (www.nic.in), significant expansion in refinery capacity over the last few years has eliminated the waiting list. A 1994 survey of households in Hyderabad showed that 63% of the (value of the) subsidy went to the richest 40% of households. By contrast, only 17% of the (value of the) subsidy went to the poorest 40% of households. The poor, for whom the subsidy was designed, do not usually use LPG for cooking.

Source: World Bank: Environmental Fiscal Reform. What Should Be Done and How to Achieve It, 2005, p. 46.

5. Ineffective policy development: Low tax rates in the forestry sector in Mali

In Mali, tax rates in the forestry sector have been set without taking into account the real costs of forest management – indeed, collection costs are slightly higher than the revenues collected. Thus, collection rates are low and enforcement of legislation is poor. EFR measures have proved ineffective and inefficient, and forestry practices continue to be unsustainable.

One reason for these low rates being maintained seems to have been fear of opposition and even social unrest as a result of reform.

Source: http://www.fao.org/docrep/005/AC650E/AC650E10.htm.

6. Coalitions to ensure sufficient capacity in Bolivia

In 1997 in Bolivia, a partnership was forged between government, the Bolivian NGO Fundación Amigos de la Naturaleza (FAN), the Nature Conservancy (TNC) and three private companies to set up and maintain the Noel Kempff Mercado National Park. In this way, organisational and financial capacity were brought together to consolidate the work of both NGOs and government.

The project has resulted in the sustainable management of 1.5 million hectares of land in the Amazon Basin, while raising sufficient funds through carbon offset credits (offsetting 25-36 million tonnes of CO2 over 30 years) to fund conservation projects elsewhere in the country.

Source: http://app.iucn.org/dbtw-wpd/edocs/PAG-013.pdf.

7. Successful public awareness campaigns in Indonesia

Fuel subsidies are highly politicised in Indonesia. Indeed, in 1998, riots in protest at fuel price rises ended in the overthrow of President Suharto. Bearing this in mind, the Indonesian government went to considerable lengths to both publicise and implement a targeted cash transfer program to compensate the poor for fuel price increases in 2005.

The efforts made by the Indonesian government probably led to the absence of major public protest against the increasing fuel prices at this time. The cash transfer programme proposed by the government was announced in newspapers, brochures, pamphlets and on TV.

However, drawing up and communicating compensatory measures is an ongoing process. In 2008, fuel price rise riots once again threatened the stability of the country.

Source: Environmental Fiscal Reform: The Results so Far: An Overview of Experiences with Environmental Fiscal Reform and revenue systems in forestry and fisheries sectors, Wageningen University, p.7 and http://www.economicinstruments.com.

8. Mobilising public support for electricity price rises in Ghana

When the Ministry of Mines and Energy in Ghana attempted to raise energy prices by 300 per cent, in May 1997, it was met with uproar. The president personally intervened to roll back the increase. As an alternative, parliament was summoned to set up a Public Utilities Regulatory Commission (PURC) in late 1997, which a year later was able to pass the same price increase with much less popular dissent. PURC staff partly attributes this to a concerted public consultation — including workshops, public forums and a media campaign — prior to raising tariffs. The key aim was to persuade consumers that the revenues generated by the price rise would be used to increase access to the poor.

Source: World Bank: Environmental Fiscal Reform. What Should Be Done and How to Achieve It, 2005, p. 58.

9. Poor revenue collection in Tanzania

In the forestry sector in Tanzania, US$ 58 million are lost annually due to the under-collection of natural forest product royalties in the districts, and a recent study revealed that China imported ten times more timber products from Tanzania than appeared on the country’s export records. In fisheries, approximately 30% accruing to local government being collected.

Awareness of this problem was highlighted by the 2004 Public Environmental Expenditure Review, which revealed: the potential of environmental resources to contribute to the public purse; significant underpricing and extremely poor revenue collection rates in fisheries and wildlife protection schemes; and relatively low levels of investment on environmental assets and improved revenue capture.

Source: http://www.worldecotax.org/downloads/info/documentation_gtz-Workshop.pdf.

10. Perspectives for reform of EFR in the forestry sector in Nicaragua

In Nicaragua, on behalf of BMZ, GTZ has supported a participatory study on the framework conditions of EFR in the forestry sector, the current state of play in relation to EFR legislation, and perspectives for pursuing new EFR measures in the sector in the future. A participatory, multi-stakeholder process on good forest governance, in which the different sectors of society are well represented, has been fostered and a new forest policy, including financing mechanisms, has been developed.

Based on that study and on the process of good forest governance, GTZ aims to work together with the partner country to support the reform of EFR in the Nicaraguan forestry sector to generate positive environmental effects – e.g. sustainable forest management and / or a reduction in illegal logging – while gaining positive fiscal benefits through an increase in the public revenue base. Initial modifications of the public tax system have already been implemented. One of the outcomes has been a tax exemption system for investments in forest plantations.

Source: GTZ, 2007.

11. Innovative price reforms to improve access of the poor to electricity in Argentina

In urban areas of Argentina, following privatisation, there were some users with low ability-to-pay that were disconnected — many of whom were urban slum dwellers that were illegally connected in the first place – the so-called “colgados” (hangers). Electricity losses of 27 per cent pre-privatisation were drastically reduced. But there was great anger over the impact on the poor and several court cases were brought on behalf of the colgados. With mounting media coverage and public pressure, the federal government, provincial government of Buenos Aires and two private distribution companies entered into a Four Year Framework Agreement. The companies were reimbursed for unpaid balances by illegally connected shantytowns, and subsidies were provided for establishing collective meters. In turn, companies agreed to waive any claims on unpaid bills since 1992 and to install 10,000 meters a month in low-income areas. As a result of the framework agreement, roughly 650,000 users were formally connected to the network.

Source: World Bank: Environmental Fiscal Reform. What Should Be Done and How to Achieve It, 2005, p. 22.

12. Country examples: Transport control by Road pricing and congestion charging – Singapore, South Korea

Singapore: Singapore’s cordon pricing measure, an Area Licensing Scheme (ASL), covers a 7.5 square km restricted zone in downtown Singapore. The restrictions are applied during the morning peak, between 7:30 and 10:30h. Access to the restricted zone is made possible through the purchase of daily or monthly licenses at post offices and kiosks outside of the zone. Since 1989, the access restrictions have been extended to include carpools and trucks (which were previously exempt under the scheme). Singapore’s ASL has been successful in reducing motorised traffic within the zone by 50%, and private car travel by 75%. The speed of the traffic has also been increased from approximately 18 to 30 km/h. The scheme was complimented by the doubling of parking charges (Hook and Wright, 2002).

South Korea: Road pricing was introduced to the #1 and #3 Tunnels linking downtown Seoul (South Korea) to the southern part of the city. Both corridors experienced high volumes of private vehicle traffic, leading to heavy congestion. Private cars with three or more passenger, buses, vans and trucks were exempt from the 2,000 won charge (US$2.20), as was all traffic on Sundays and national holidays. The road pricing schemes resulted in a 34% reduction in peak period passenger vehicle volumes in the two years following implementation. Average travel speeds also increased by 50%, from 20 km/h to 30 km/h. As it was not an area-wide charging scheme, traffic volumes increased on alternative routes up to 15%. However, average travel speeds also increased as a result of improved flows at signalled intersections and increased enforcement of on-street parking rules on alternative routes (World Bank, 2002).

Source: Transport and Climate Change, Module 5e, Sustainable Transport: A Sourcebook for Policy-makers in Developing Cities, http://www.gtz.de/en/themen/umwelt-infrastruktur/transport/18708.htm

13. Sound preparation for legislation: The plastic bag levy in Ireland

Preparations for the plastic bag levy in Ireland were very thorough. In 1996, framework legislation was introduced. In 1999 a consultancy report was produced, and a proposal was drawn up and agreed by the Irish cabinet in 2000. This was then reviewed in consultation with industry bodies and leading retailers, and existing legislation amended to fulfil all requirements of the levy. Many stakeholder groups were involved in drawing up the final proposal, and the Minister of Environment worked hard to secure the support of the Minister for Finance and Ireland's Revenue Commissioners.

Source: http://www.economicinstruments.com/index.php

14. Powerful lobbies: the political influence of the middle classes in India

In India, the middle classes are strongly opposed to higher taxes on transport fuels, arguing that higher fuel taxes are regressive, ie that they effect the poor most. But the middle classes consume much more transport fuel than the poor and thus, have most to gain from low tax rates.

However, because the middle classes are more politically empowered and hence have more political influence, they are able to protect their interests on the pretext that it is the interests of the poor that they are representing. The myth that fuel taxation is regressive is so perpetuated.

Source: http://www.worldecotax.org/downloads/info/documentation_gtz-Workshop.pdf.

15. The gradual introduction of ecological tax reform in Germany

In Germany, EFR was first conceptualised in 1983, and reached the political agenda during parliamentary election campaigns in 1990, when one party prepared a concept based on raising energy taxation, while simultaneously reducing the tax burden for low income earners and raising transfers to pensioners. After a long delay, due notably to the reunification of Germany, EFR was again examined in 1998 following a change of government. This generated fierce political debate. Potential losers from the reform, including energy-intensive industries (chemical industry, steel producers etc.) as well as employers associations and labour unions strongly resisted the

introduction of EFR. In contrast, labour intensive sectors and companies, especially service industries, were more open to reform.

Following a number of stakeholder consultations, in 1999 parliament agreed on legislation to implement tax reform, which i) raised taxes on gas and oil products; ii) raised taxes on electricity; and iii) reduced social security contributions. Contributions of both, employee and employer, to the public pension system were lowered significantly, thus reducing the cost of labour. The reform was implemented gradually. Tax rates were raised in 5 incremental steps from 1999-2005, while contributions to the public pension system correspondingly lowered.

Source: OECD: Environmental Fiscal Reform for Poverty Reduction, DAC Guidelines and Reference Series, 2005, p. 35.

16. Improved water supply in Conakry, Guinea, West Africa by means of innovative mobilisation of private investment

In 1987, water supply services in the city of Conakry, Guinea, West Africa, were extremely poor. Less than 40% of the city's population had access to piped water. Revenues raised in the sector (from people connected to the grid) accounted for only a fraction of the costs incurred. The situation was a classic case of a vicious cycle of "low-quality-low-willingness-to-pay-low-revenues". The government decided to try to **attract private investment** to fund improvements to the service. Private operators were assured of sufficient revenues by initially low, but rising, charges levied on service users and initially high, but declining subsidies from the government (largely funded by a credit from a development agency).

This is a good example of innovative thinking because:

1. The government attracted investment to the sector by means of creative policy making
2. Long-term policy making made cost-recovery a realistic long-term goal
3. Subsidies were transitional (i.e. limited in time) and transparent

Since the introduction of "social connection rates" – ie targeted subsidies for the poor – coverage has increased considerably. Water quality now conforms with WHO standards. Charging has enabled both private and state operators to improve their financial performance and the water sector is no longer subsidised. The vicious cycle has been replaced by a virtuous cycle of good service and reliable revenues.

However, problems have included poor administrative and institutional capacity, the lack of a dispute resolution mechanism between government and private investors, and high prices for water services.

Source: OECD: Environmental Fiscal Reform for Poverty Reduction, DAC Guidelines and Reference Series, 2005, p. 95.

17. Review and revision of the pollution levy system (PLS) in China

China's Pollution Levy System (PLS) is among the most extensive in the world. It is an example of pragmatic and gradual implementation of EFR, in the context of a transition towards a market-based economy. The PLS consists of fixed charges on 200 substances that are applied to air emissions, water discharges and solid waste. The scheme began in 1979. Initially confined to

only a few provinces, it has expanded over time, building on the lessons from implementation experience. By 1994, over USD 2 Billion had been collected from environmental levies.

The system has been regularly monitored and amended in light of weaknesses identified, with respect to the level of the levies, enforcement difficulties and others as well as the tradeoffs faced by EPBS between reducing emissions and generating revenue. The PLS does not conform to a "textbook" example of environmental taxation. For example, fees are paid only for discharges exceeding a certain level, thus resembling non-compliance fees. In addition, the funds collected are used first to finance abatements expenditures by industry and for central administrative costs. While the fees are considered to be lower than marginal abatement costs, effectiveness of collection is linked to population density and income levels, suggesting that public pressure plays an important role in stimulating enforcement efforts. Despite uneven progress in different parts of the country, the system is generally considered to play an important role in containing pollution in China in a period of rapid industrialisation.

Source: http://www.oecd.org/dataoecd/14/25/34996292.pdf

Additional Examples:

18. 'FEASIBLE': Matching plans with resource availability

The OECD and the Danish government have developed a decision-support tool – FEASIBLE – to assess the cost of different policy options based on technical parameters and their financial feasibility under different scenarios regarding levels of charges, public subsidies, etc. This approach is complemented by participatory dialogues with major stakeholders. The analysis reveals financial deficits likely to undermine implementation, and gives policy makers the opportunity to consider ways of bridging the gap – by mobilising extra resources, scaling down plans, or extending the time frame.

This approach has been tested in the Sichuan province of China in relation to wastewater collection. Analysis revealed significant budget shortfalls and recommended increased user charges for the 80% of the population that could afford to pay, and direct income subsidies for the poorest 10-20%.

Source: OECD (2003), Financing Strategies for Water and Environmental Infrastructure

19. Individual drivers for change in Chumbe Island Coral Park, Zanzibar.

Setting up a marine reserve in the waters surrounding Chumbe Island was a challenging process. One of the key factors determining the project's success was the involvement of an extremely committed and visionary individual, with sound local knowledge and determination to succeed.

Source: http://app.iucn.org/dbtw-wpd/edocs/PAG-013.pdf.

20. Lack of capacity and low motivation in Sri Lanka

In Sri Lanka, EFR legislation is already in place, but enforcement and compliance are relatively poor. This is attributable to a number of causes:

- Social considerations – fear of opposition and of the regressive effects of reforms.
- Political prioritisation of environmental policy is low.
- The environmental benefits and revenue-raising potential of EFR instruments is poorly understood.
- Many EFR instruments include design deficiencies which limit their efficacy.

Source: http://www.worldecotax.org/downloads/info/documentation_gtz-Workshop.pdf.

21. Country example: Implementation of Bus Rapid Transit (BRT)

The BRT is a cost efficient, fast realizable alternative to subways in many fast growing cities. The public bus system is provided with vast priorities to run a high frequent schedule, including separate bus lane, traffic light control, etc. A study of the 98 B-Line BRT in Vancouver, British Columbia, conducted by TransLink, Transport Canada and the IBI Group confirmed many benefits of that BRT system including increased ridership, reduced vehicle emissions, improved reliability, improved customer satisfaction. Analysis of the transit supportive signal timing and the transit signal priority system that supports the service confirmed a slight improvement in travel times and reliability for all vehicles in the corridor with negligible impact to traffic crossing the corridor.

Source: Wikipedia, 2008, http://en.wikipedia.org/wiki/Implementation_of_bus_rapid_transit

22. Building on existing legislation in Brazil

With technical support from GTZ, the Brazilian Federal States of Amazonas and Acre are currently introducing a redistribution of income from the Value-Added Tax (V.A.T. or ICMS in Portuguese) according to environmental criteria.

This green redistribution of ICMS income, called ICMS Ecológico, was first introduced in 1991 in the State of Paraná, also with GTZ support, and is today being applied in 10 of the 27 Brazilian States. The overall ICMS accounted for over 280 billion US$ in 2006 and is levied by each Federal State. Part of the income (25%) is channeled back to municipalities, most of it according to their contribution to GDP. In the 10 States with ICMS Ecológico, some of the money is redistributed to municipalities according to the size of protected areas on their territory or their compliance with environmental standards (e.g. quality of basic sanitation services).

The States of Amazonas and Acre, located in the heart of the Amazon basin have chosen an innovative path, combining the concepts of ICMS Ecológico with Reducing Emissions from Deforestation and Degradation (REDD) by linking the redistribution of ICMS funds to municipal deforestation rates. Thus, municipalities that effectively lower their deforestation rates are directly remunerated by the tax system.

Source: GTZ, 2007.

23. Laying sound foundations for change: Uganda

An enabling legal and policy framework for the implementation of EFR was put in place in Uganda already during the 1990s. The 1995 National Environment Act permits the National Environment Management Authority, in consultation with the Ministry of Finance, Planning and Economic Development, to recommend EFR measures. Other legislation provides for the polluter-pays and beneficiary-pays principles.

Source: http://www.worldecotax.org/downloads/info/documentation_gtz-Workshop.pdf.

24. Country examples: Transport control by Road pricing and congestion charging – London

London: The London Congestion Charge came into effect in February 2003. The Charging Zone covers an area in Central London (which was extended in 2007), and drivers of non-exempt vehicles must pay a charge of £8 (US$16) per day to enter and travel within this zone. The scheme is enforced by a network of Automatic Number Plate Recognition (ANPR) cameras that monitor vehicles entering and circulating within the Charging Zone. The scheme has resulted in an estimated 19% reduction in traffic related CO2 and a 20% reduction in fuel consumption (Jones, G. et al., 2005).

Source: Transport and Climate Change, Module 5e, Sustainable Transport: A Sourcebook for Policy-makers in Developing Cities, http://www.gtz.de/en/themen/umwelt-infrastruktur/transport/18708.htm

Annex 3: Abbreviations

ASL	Area licensing Scheme
BMZ	Federal Ministry for Economic Cooperation and Development
BRT	Bus Rapid Transit
CO_2	Carbon dioxide
DAC	Development Assistance Committee
EEA	European Environment Agency
EFR	Environmental Fiscal Reform
EHS	Environmental Harmful Subsidies
ELC	Experimental Learning Cycle
ENVIRONET	Network on Development Co-operation and Environment
ETR	Environmental Taxation Reform
FC	Flipchart
GBG	Forum Ökologisch-Soziale Marktwirtschaft/Green Budget Germany
GCET	8th Global Conference on Environmental Taxation
GDP	Gross Domestic Product
GTZ	German Technical Cooperation
kw	Kilowatt
kwh	Kilowatt hour
LPG	Liquid Petroleum Gas/Liquefied Petrol Gas
MDGs	Millennium Development Goals
MoE	Ministry of Environment
MoF	Ministry of Finance
MSEs	Micro- or Small Enterprises
NGO	Non-governmental Organisation
NO_x	Nitrogen oxide

OECD	Organisation for Economic Co-operation and Development
PSP	Private Sector Participation
SMEs	Small- and medium-sized enterprises
SO_2	Sulphur dioxide
ToT	Train-of-Trainers
USD	US-Dollar
VAT	Value Added Tax
WSS	Water Supply and Sanitation Service

Annex 4: Sources & key references on EFR

OECD/DAC 2005: Environmental Fiscal Reform for Poverty Reduction
http://www.gtz.de/de/dokumente/en-environmental-fiscal-reform.pdf
http://www.oecd.org/dataoecd/14/25/34996292.pdf

OECD 2006: The Political Economy of Environmentally Related Taxes
Not available for download, table of contents and Executive Summary online at the following link:
http://www.oecd.org/document/20/0,3343,fr_2649_34281_36815124_1_1_1_1,00.html#TOC

IBRD/WORLD BANK 2006: The International Bank for Reconstruction and Development/The World Bank et al.
Environmental Fiscal Reform: What Should Be Done and How to Achieve It
http://www.unpei.org/PDF/policyinterventions-programmedev/EnvFiscalReform-whatshouldbedone.pdf

UNEP 2003: Energy Subsidies: Lessons Learned in Assessing their Impact and Designing Policy Reforms
http://www.unep.ch/etb/publications/energySubsidies/Energysubreport.pdf

UNEP 2004: United Nations Environment Programme
The Use of Economic Instruments in Environmental Policy: Opportunities and Challenges
http://www.unpei.org/PDF/policyinterventions-programmedev/Use-Economic-Instruments-Env-Policy.pdf

UNEP 2009: Training Resource Manual: The Use of Economic Instruments for Environmental and Natural Resource Management, First Edition 2009
http://www.unep.ch/etb/publications/EI%20manual%202009/Training%20Resource%20Manual.pdf

European overview studies from the European Environment Agency (EEA http://www.eea.europa.eu/)
2006-report on market-based instruments in a more popular style:
http://reports.eea.europa.eu/eea_report_2006_1/en
2006-report which is the basis for the one above, but more in-depth:
http://reports.eea.europa.eu/technical_report_2005_8/en
2004-report on subsidies:
http://reports.eea.eu.int/briefing_2004_2/en
1996-report on taxes:
http://reports.eea.europa.eu/92-9167-000-6/en
2000-report on taxes:
http://reports.eea.eu.int/Environmental_Issues_No_18/en/tab_content_RLR

Sources from the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and other sources on Germany:

Official Site on EFR
http://www.bmu.de/english/ecological_industrial_policy/ecological_financial_reform/doc/41250.php

A summary of the first macroeconomic impacts study in English (2002):
http://www.bmu.de/files/erneuerbare_energien/downloads/application/pdf/diw_energypolicy2002.pdf

Summarising article "Ökologische Finanzreform" (German only):
http://www.bmu.de/oekologische_finanzreform/downloads/doc/35810.php

Renewables strategy and targets and potential studies and the most successful Renewable Energy Sources Act (in English):
http://www.bmu.de/english/renewable_energy/general_information/doc/4306.php
http://www.bmu.de/english/renewable_energy/current/aktuell/3860.php
Marketing/Promotion of ETR:
Posters (What does ETR bring you? Jobs, money, climate, sex):
http://www.bmu.de/de/1024/js/download/b_steuer/

Movie (copyright free for translation in other languages – so far German, English)
http://www.bmu.de/english/climate_change/doc/3472.php

Studies on the impacts of the ETR in Germany published in 2004 and 2005, however all in German:
The press release http://www.uba.de/uba-info-presse/2005/pd05-059.htm and several follow-up studies (on sectoral and on macroeconomic impacts, on innovations (identifying concrete technologies), on entrepreneurs (who are winners), on private households:
http://www.umweltbundesamt.de/uba-info-medien/oekosteuer.htm.

Impacts of the Ecological Tax Reform on Innovation, Jobs, Enterprises and the Environment:
http://www.uba.de/uba-info-presse/2004/pd04-109.htm
http://www.umweltdaten.de/uba-info-presse/hintergrund/oekosteuer.pdf

The latest subsidy report from the German Government (2007) which is the most transparent and comprehensive one in the world (German only, published every two years):
http://www.bundesfinanzministerium.de/nn_4312/DE/Wirtschaft__und__Verwaltung/Finanz__und__Wirtschaftspolitik/Finanzpolitik/Subventionspolitik/node.html?__nnn=true

Study on the subsidies for lignite:
http://www.uba.de/uba-info-presse/2004/pd04-095.htm

Study on the impacts of the removal of German hard coal subsidies (German only):
http://www.umweltbundesamt.de/uba-info-medien/mysql_medien.php?anfrage=Kennummer&Suchwort=3572
Other background papers: http://www.umweltbundesamt.de/uba-info-presse/hintergrund/index.htm

GTZ Publications

Sustainable Transport: A Sourcebook for Policy Makers in Developing Cities
Available for download from the GTZ website:
http://www.gtz.de/de/dokumente/en-transport-and-climate-change-2007.pdf

A number of articles on pricing transport fuel and international transport fuel prices are available under the following link: http://www.gtz.de/en/themen/umwelt-infrastruktur/transport/10285.htm

Environmental Fiscal Reform in Developing, Emerging and Transition Economies: Progress & Prospects. Documentation of the 2007 special Workshop hosted by the Federal Ministry for Economic Cooperation and Development (BMZ) and the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
http://www.worldecotax.org/downloads/info/documentation_gtz-Workshop.pdf

Environmental Fiscal Reform for Sustainable Development and Poverty Reduction. Workshop Proceedings and Country Case Studies
http://www.oecd.org/dataoecd/15/42/36309072.pdf

Useful links to GTZ website on public finance:
http://www.gtz.de/de/themen/politische-reformen/oeffentliche-finanzen/19671.htm
http://www.gtz.de/de/themen/politische-reformen/oeffentliche-finanzen/19661.htm

Databases on EFR

The OECD, in cooperation with the European Environment Agency, provide a regularly updated database where all kinds of environmentally related taxes are described, including also links to evaluation studies.
http://www2.oecd.org/ecoinst/queries/index.htm

Hosted by the School of Geography, Planning and Environmental Policy, University College Dublin, the objective of this site is to present, in a non-technical fashion, information on the practical use of economic instruments in environmental policy. It is envisaged that the site will be of interest to policymakers, members of the public, academics and students. The site draws together information that has been published in hard copy format and synthesises it into a searchable database. Rather than merely providing lists of instruments, a key objective of the site is to provide details of instruments in use and, in particular, information on the performance of these instruments.
http://www.economicinstruments.com/index.php

Links to many international and national studies on EFR
http://www.foes.de/publikationen/?lang=en
A number of publications can be purchased at reduced rate at the Green Budget Germany website: http://www.foes.de/publikationen/zur-bestellung/?lang=en

International Institute for Environment and Development (www.iied.org/Gov/spa) – provides downloadable papers and books on EFR and related subjects and links to www.nssd.net for information on sustainable development strategies.